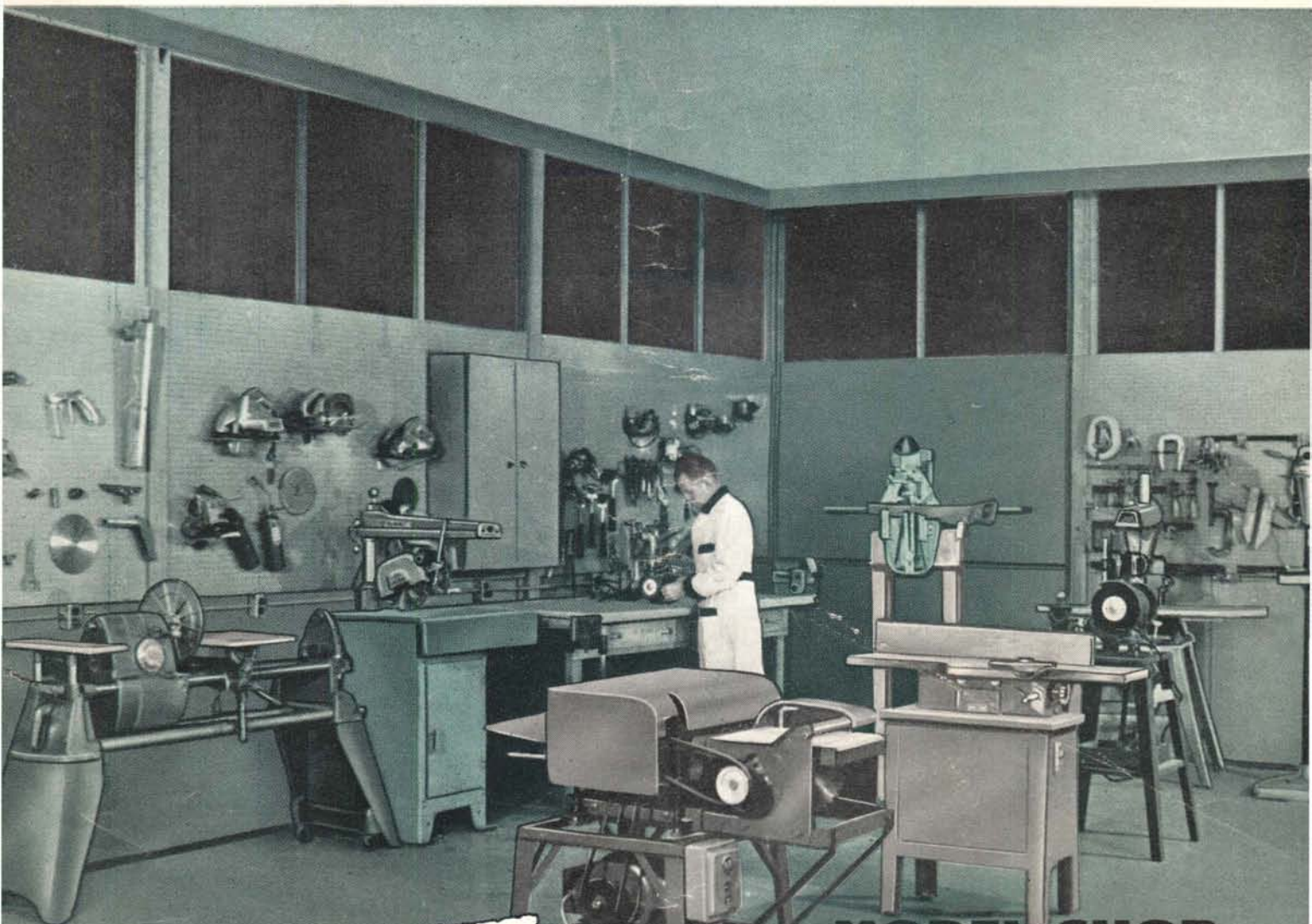
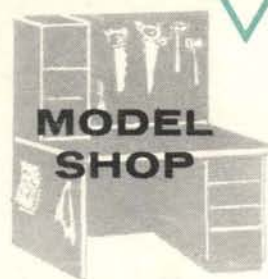


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The contents of WORKBENCH are indexed in The Reader's Guide to Periodical Literature, which is on file in all public libraries.

Postmaster: Send form 3579 to: Modern Handcraft, Inc., 543 Westport Rd., Kansas City 11, Mo.

WORKBENCH is published bimonthly by Modern Handcraft, Inc., 543 Westport Road, Kansas City 11, Missouri. Second class postage paid at Kansas City, Missouri, and additional mailing offices. Thirty-five cents a copy. Annual subscription \$2 in the United States and its possessions; \$2.50 in Canada; Foreign subscriptions, \$2.50. Six weeks advance notice required for change of subscription address. Both old and new addresses must be given, and request marked for Circulation Department, WORKBENCH. Printed in the U. S. A., Copyright 1959, by Modern Handcraft, Inc.

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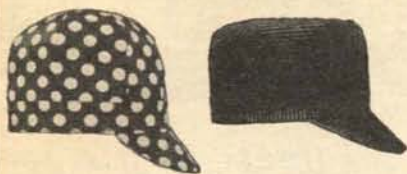
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the Sept.-Oct. issue, but do not have  
an old electric clock to salvage.  
Where can I buy the mechanism?  
Mr. L. L., Los Angeles, Calif.

Dear Mr. L. L.:

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3175, Daly City, Calif. Also, mechanical  
and electric-clock works can be pur-  
chased from Imperial Clock Co., 616  
Thirteenth St., Highland, Ill.

Dear Mr. Hedden:

I like the magazine fine and think  
your changes are making it better.  
There are a couple of questions I  
would like to ask. Why is it that in  
the Research Department you use  
only the initials of people that ask  
questions, and sometimes in the Let-  
ters to the Editor column?

Mr. R. Smith, Chicago, Ill.

Dear Mr. Smith:

Thank you for your kind words about  
**WORKBENCH**. There are two main  
reasons why we use only the initials  
and states of people asking questions.  
First, not everyone wants it known that  
they require outside help on a project  
or problem. Second, in some cases other  
readers would write to a person, causing  
a lot of bother and invading his personal  
privacy. When no address is given, a  
writer will send his questions to us. It  
is our job to screen the letters and  
answer the questions.

Dear Mr. Hedden:

In the Sept.-Oct. issue on page 13  
of the basement story, wall anchors  
that can be cemented to masonry  
are shown but not identified. What  
are these called and where can they  
be obtained?

Mr. C. E. Willson, N. Y.

Dear Mr. Willson:

The editor responsible for the over-  
sight has lost his coffee breaks for a  
week. If you can't find Gemco Anchor  
Nails at your hardware store, write to:  
Goodloe E. Moore, Inc., Danville, Ill.

Dear Sir:

I would like to know if you could  
publish in the **WORKBENCH** a formula  
for laying out patterns for making  
funnels out of sheet metal. If you do  
not have the information at hand, I

wonder if one of the readers of your  
fine magazine would be so kind as  
to furnish the information.

Your "Letters to the Editor De-  
partment" is a fine addition to your  
magazine and makes the **WORKBENCH**  
much more valuable to its readers.

Yours truly,

Frank J. Fitch, Las Vegas, N. M.

Dear Mr. Fitch:

We have a man working on an article  
on sheet-metal layout and the story will  
appear in a future issue. If other read-  
ers have particular articles they would  
like to see, please write and let us know.

Dear Mr. Hedden:

I notice that on some short articles  
that tell about a new product you do  
not have an address. Can we get the  
address by writing to the magazine?  
Every issue of the magazine seems  
to be getting better.

Mrs. L. L. Mc T., Portland, Ore.

Dear Mrs. Mc T.:

If an address is not shown in an ar-  
ticle just write to us. We will give you  
an address or forward your letter to  
the correct address. Mention that you  
have seen the article in **WORKBENCH**,  
as some companies have many prod-  
ucts, and describing where you have  
seen it helps them locate the informa-  
tion. Also, we send copies of each issue  
to manufacturers whose products are  
shown in a particular issue.

We hope to continue improving  
**WORKBENCH** for you and all readers.

Dear Sir:

I have enjoyed the article on the  
lamps made of Mr. Clean bottles very  
much. I make fancy lamps with arti-  
ficial flowers inside to match the  
room they are to be used in (with  
Mr. Clean bottles). It would be won-  
derful if there could be a page like  
this in every issue where subscribers  
could send in ideas.

Mrs. Vern Vande Mark,  
Lake Park, Iowa.

Dear Mrs. Vande Mark:

We are happy that you like the ar-  
ticle on making lamps from empty bot-  
tles. As to subscribers sending in ideas,  
we encourage, request and pay for ideas  
sent to us.

*Jay W. Hedden*

Jay W. Hedden, Editor



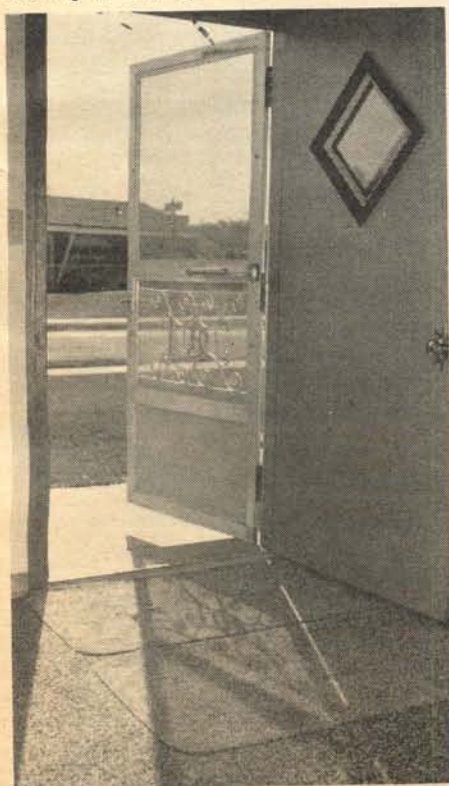


AFTER: Attractive section of ceramic tile is cemented to floor just inside front entrance that leads directly into room. Tracked-in mud, snow and rain drop off onto tile that is cleaned easily in minutes.

## Ceramic-Tile "Foyer"

WARNER BENSON

BEFORE: Throw rugs on carpet are used to protect it, but are not attractive and require frequent cleaning or washing.



WOULD YOU like to eliminate the need for "feet-cleaning" throw rugs over the carpeting inside your front room door? Ceramic tile is the answer, as shown in the "after" photo. Tile is wiped clean easily, is extremely attractive and the contrasting section of tile gives the visual impression of a foyer. A pole, or other type, lamp can be placed at the corner of the tiled section to provide an even more definite break. A single plant helps, but a planter box would make an even more positive division. The planter could be made of plywood and the same tile used on the floor could be cemented to it. For the installation shown, several sheets of tile were positioned on the carpet and portions removed until the right effect was achieved. Chalk was used to outline the tile, then the section of carpeting was cut out. Sandpaper was used to roughen the varnished floor and mastic adhesive was used to cement the tile to the floor. When the mastic had set, the paper sheets on the tiles were washed off and the spaces between tiles filled with grout. White diamond-shape tiles were used in this installation to contrast with the black and white of the pattern in the carpet. Ceramic tile is available in a rainbow of colors and blacks and whites to match or contrast with any carpet or decor and also in several thicknesses. △ △

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## keeping up with craft and home products

In communicating with companies whose products are described in this department, please mention **WORKBENCH**.

### Plastic-Covered Screens Become Storm Windows



CLEAR-PLASTIC envelope fits over window screens to convert them to inexpensive storm sash. Cost 50 cents at most dealers. Stormvelope Co., 6407 E. Halbert Rd., Washington 14, D. C.

### Workshop-Pest Removers



HUMOR AND horror items in this kit will amuse your friends, keep away kibitzers from your workshop. Clacking teeth for the talkers, disembodied hand for the squeamish, other items for would-be tool borrowers. Sent post-paid, \$5.25, Johnson Smith, 6615 E. Jefferson Ave., Detroit 7, Mich.

### Small-Engine Manual



GASOLINE ENGINES, such as used in lawn mowers, chain saws and concrete mixers are described completely in this manual, with accurate drawings and information on maintenance and repair. Price \$4.65, Implement and Tractor Publications, Inc., 1014 Wyandotte, Kansas City 5, Mo.

### Interlocking Floor Tiles Need No Adhesive



INTERLOCKING TABS on these 1/8-in.-thick rubber tiles eliminate need for adhesives when tiles are laid wall-to-wall. Damaged tile easily replaced. Available in assortment of colors. Sears, Roebuck and Co.

### One-Man Concrete Mixer



EVERY DO-IT-YOURSELFER should own one of these scaled-down mixers that will handle concrete, paint, plaster and mortar. Mixes enough concrete in 1 hr. for 3 x 8-ft. sidewalk. Adjustable angle for different materials. Unit without motor is \$29.95, will use any 1/4-h.p. electric motor. Kol, Inc., 2323 Ellis Ave., St. Paul, Minn.

### Salt-Spreader Lawn-Seeder



ALL PLASTIC lawn seeder can be purchased now and used for spreading salt on icy walks and drives. Non-rusting plastic unit then is flushed with water and used for applying grass seed and fertilizer in spring. "Greenmaster" Federal Tool Corp., 3600 W. Pratt Blvd., Chicago 45, Ill.



## No Pearl in Your Oyster?



MAKE A DREAM come true with an unopened oyster in each tin, guaranteed to contain a pearl. \$1.50, which includes tax and postage from Sierra Traders, Sierra Madre, Calif.

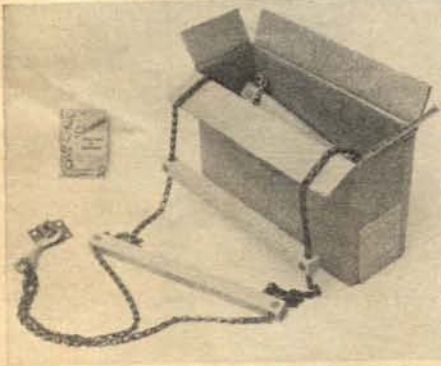
## Scroll Shelf Dividers



Shelving

NEWEST IN line of metal and wood furniture accessories for do-it-yourselfers are scroll dividers. Write for free brochure from: U-DO-IT, 7014 Colby Ave., Des Moines 11, Iowa.

## Compact Home Fire Escape



NO DANGER of being trapped on upper floor by fire with this ladder. It snaps to staple plates on floor, is tossed out window. Coppered-steel chain, hardwood rungs. 14-ft. for 2nd floor \$12.95, 24-ft. for 3rd floor \$18.95. Available from DeLong Enterprises, Merrimac, Mass.

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**JANUARY-FEBRUARY, 1960 » 7**



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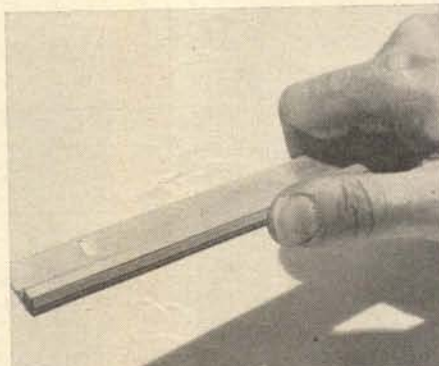
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MORE HEAT, less bother is provided by this fireplace grate that has inclined bars that cause logs to roll to rear of fireplace. Burning embers then face toward room, so heat is not wasted up chimney or against floor. Ember King, Fairfax Mfg. Co., 107 Gordon Rd., Falls Church, Va.

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3"	29 1/2" — 30"	1.18	1.28	1.40
4"	21 1/2" — 24"	1.64	1.75	1.84
4"	27"	1.79	1.89	2.05
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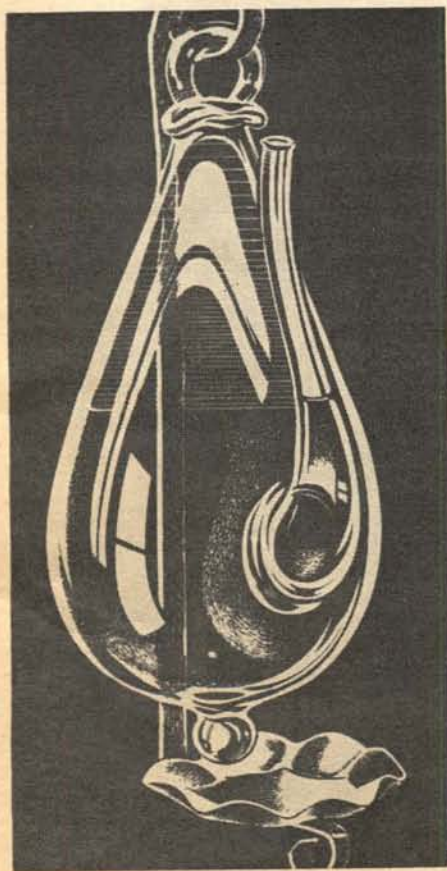
## Craft and Home Products

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THREE PATTERNS of embossed aluminum tubing now are available. Fittings presently used on smooth 1-in. tubing can be used with patterned material. Wherever Reynolds' do-it-yourself aluminum is sold.

### Nantucket Weather Glass



OPERATED BY atmospheric pressure, this weather glass is barometer as well as attractive decoration. Water, colored to suit, rises and falls in spout to indicate weather. Ol' Nantucket Weather Glass, \$3.95, Doerr Glass Specialties Inc., Vineland, N.J.

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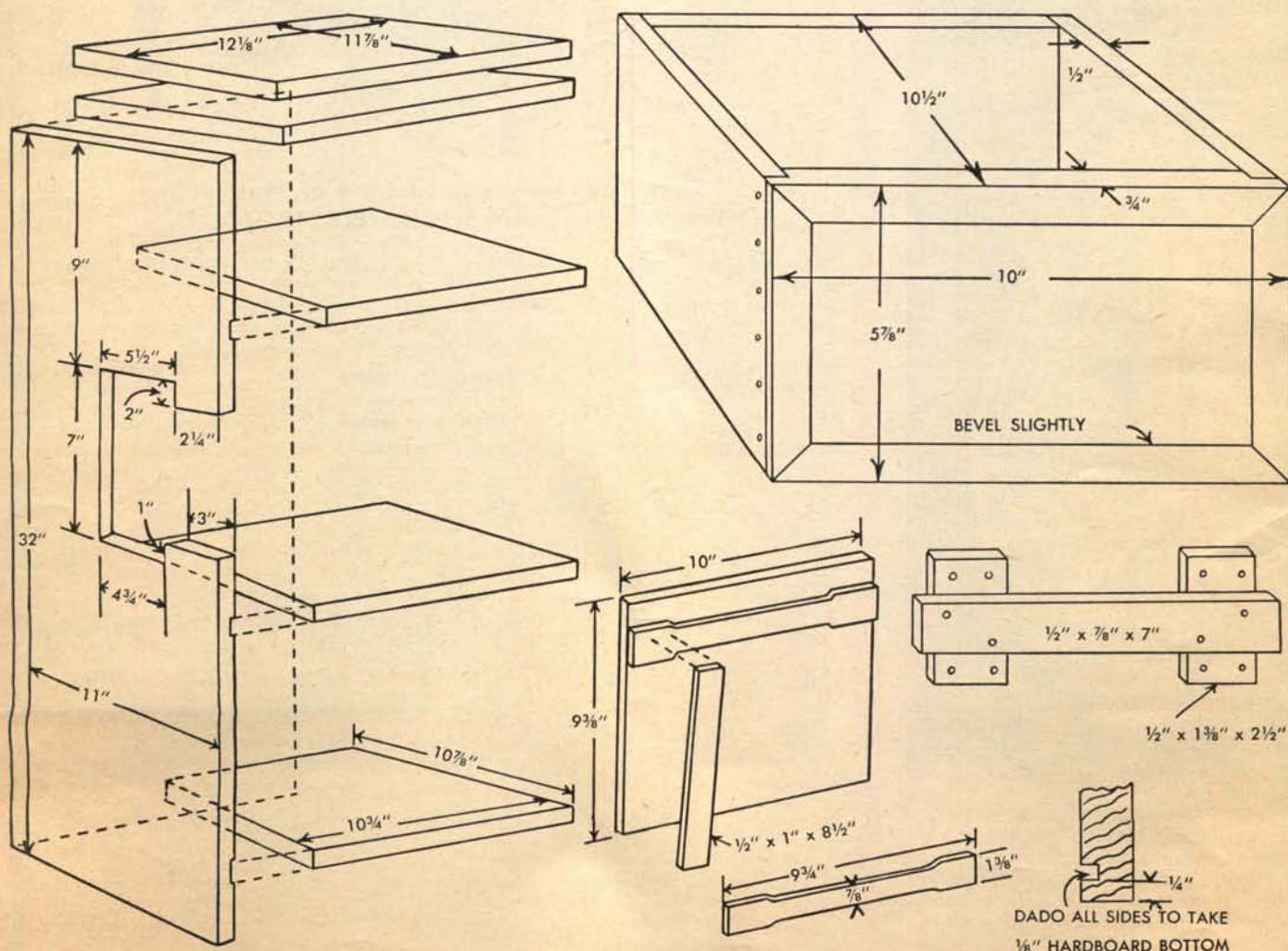
THE FINISHED STAND in use. It's attractive as well as useful.

# Knotty Pine Stand Does Double Duty

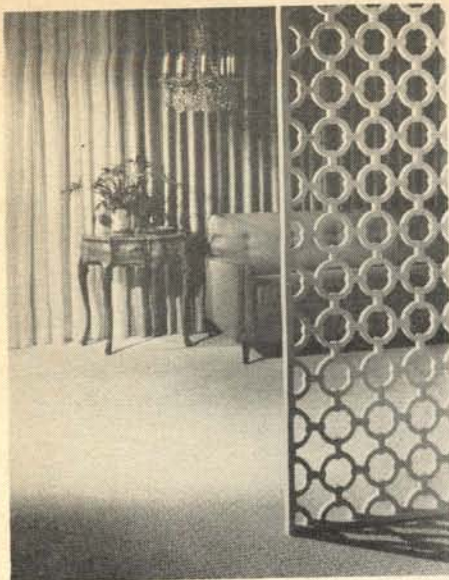
DICK HUTCHINSON

IN A knotty pine den this stand belongs to Dad and has an ash tray, tobacco canister and perhaps a pipe rack on the top. Matches and other smoking supplies can be kept in the top drawer, books on the open shelf, slippers and odds and ends in the bottom cabinet. With a lamp on top, the personality changes and it becomes a bedside night stand. The books remain, but the drawer would be handy for medicines or perhaps writing materials if you like to write letters during the quiet end of the day. The sides, back, shelves and top of the stand are cut from 1 x 12 stock. Shelves are fitted in dadoes cut in the sides. Shallow grooves

sawed in the stock simulate milled stock. Pulls for the door and drawer are assembled from strips of material and screwed in place. All shelves are the same size, which simplifies construction. The top of the stand is slightly oversize for better appearance. The sides and back are mitered, then glued and held with brads or finish nails. Shelves are fastened with wood screws. Rabbets cut in the vertical edges of the drawer front permits a half-lap joint with the drawer sides. Dadoes,  $\frac{1}{8} \times \frac{1}{8}$  in., are cut  $\frac{1}{4}$  in. above the lower edges of the drawer front, sides and back to accept a sheet of  $\frac{1}{8}$ -in. hardboard that is used for the bottom.  $\triangle \triangle$





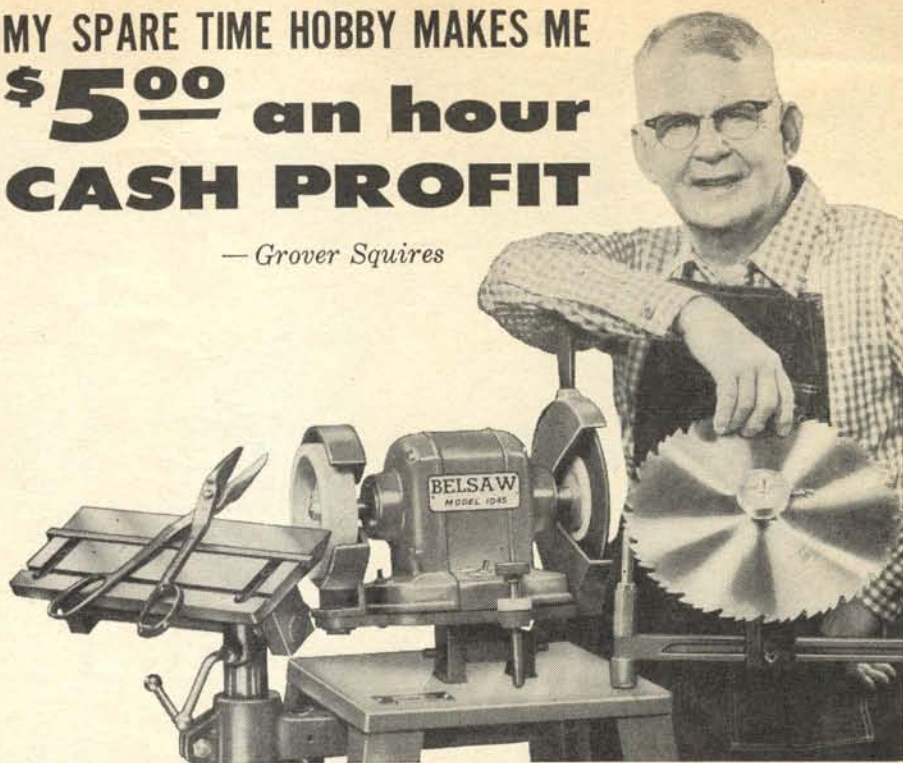


## Plastic "Stonework" Grilles

ROOM DIVIDERS, dropped ceilings, and window cornices are just a few of the places where this attractive, synthetic stonework can be used. Despite its massive appearance, the plastic material is extremely light in weight and easily handled. The material can be worked with ordinary hand tools, and because of its light weight, can be installed with no need for special structural reinforcements. Called Sculpta-Grille, the grille-work varies in thickness from 1½ in. to 1¼ in., depending on the particular pattern. Ring-and-Bar is the design shown in the photo, one of a number of designs available. The usual color is stone-white, but special colors can be furnished for special orders. The accidental knocks and blows the material will receive in normal, everyday household living will not damage it, and the plastic is cleaned easily. Sculpta-Grille is available in 6-in. multiples from Harvey Design Workshop, Inc., 66 Denton Ave., Lynbrook, N. Y. The plastic material from which the grillework designs are made is Tenite butyrate, manufactured by Eastman Chemical Products, Inc. △ △

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## Picture Tour Of The MODEL SHOP

Months of work, full cooperation from tool manufacturers and careful screening of requests from you readers created the Model Shop.

NOT REPRESENTATIVE, but rather a composite, describes the Model Shop. In it we have tools for every degree of home craftsman. There are tools for the fellow who occasionally does a small project on the kitchen table, more complex power tools for the genuine, full-time do-it-yourselfer, and even saw-blade and tool-sharpening machines for the man who wants profit from his workshop.

Lack of space prevented showing all the hand tools being used. The Stanley Surform tools we found to be ideal for roughing to shape glass-fiber patches used in auto-body repair. An article on body repair, showing the tool in use, will appear in an early issue of *WORKBENCH*. Carbide-grit blades for both circular and portable saws, as well as sanding disks and files, (Karbide King, manufactured by Deluxe Saw and Tool Co.) are not shown individually, but are in constant use in the shop. The saw blades have a different grit on each side, so that after the blade is used to cut a board, it then can be used to smooth the edges and surface of the board.

Some tools came in too late to be shown in this issue, such as the Shopmate Radial-Arm saw, from which

1. Drill press is versatile, has many more functions than simply drilling holes. It will operate as router, drill square holes with mortising bit, cut recesses with surface planer.

2. Versa-Vise holds rod threaded by Threadit die held in handle that also is holder for dies; Threadit tap wrench is both wrench and holder. There are five sizes of taps and dies in sets.

3. Hand-size spray gun is powered by gas propellant in disposable container, is being used here to spray clear sealer on plywood. It will handle almost any properly thinned liquid.

4. Practically a basic kit for a home workshop, this set of Stanley hand tools can be used to cut, drill, measure and shape wood. Hacksaw is a must for any workshop.

5. Used here to "power-carve" a piece of wood, this versatile hand grinder has as many uses as it has variety of grinding wheels, saws, burrs, drum sanders and other tools in own metal case.

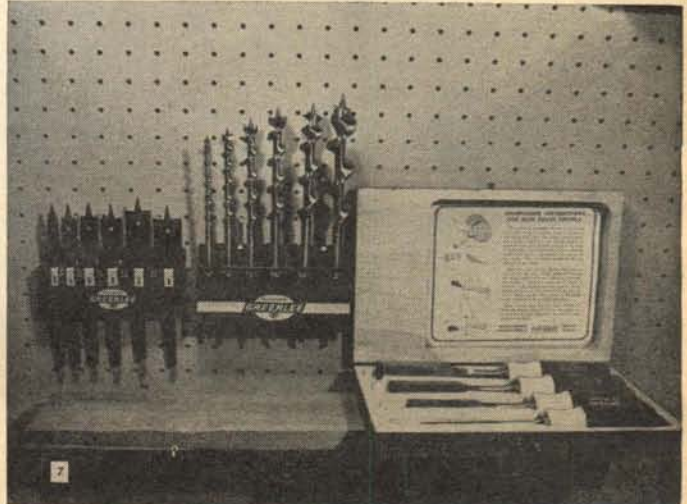
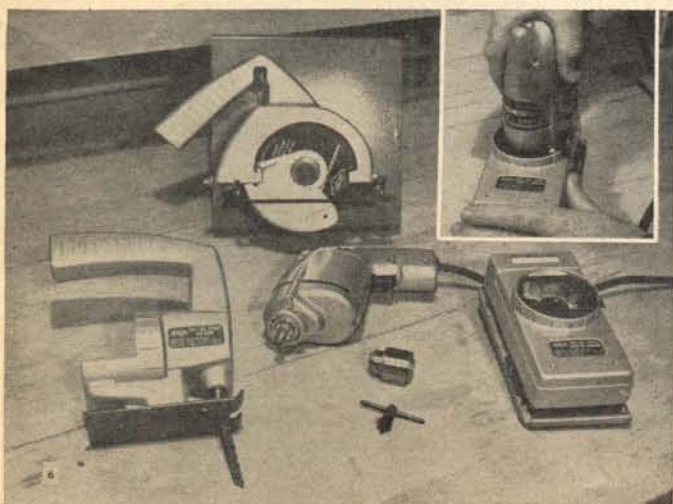
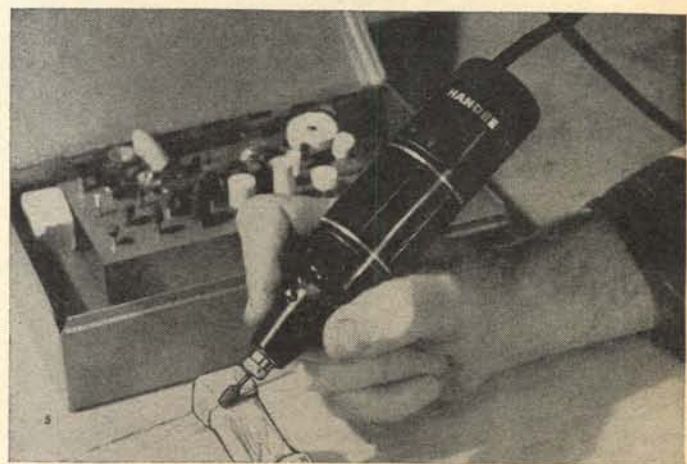
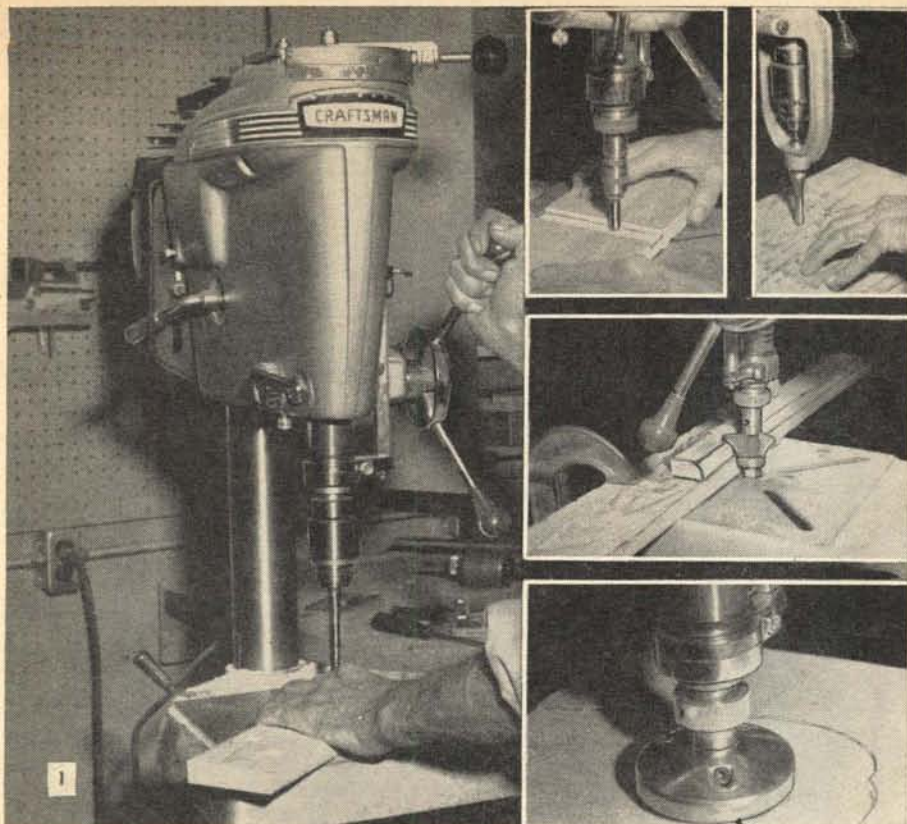
6. Drill motor with chuck removed—it has special collar on shaft—is basic power unit that snaps into various tools to produce a one-motor power-tool set. Jig saw, circular saw, orbital sander are shown.

7. Ideal additions to any woodworking shop are these power bits and auger bits in their own metal racks. Set of wood chisels comes in its own wooden case with directions for sharpening.



"I think you're carrying this new workshop christening too far!"





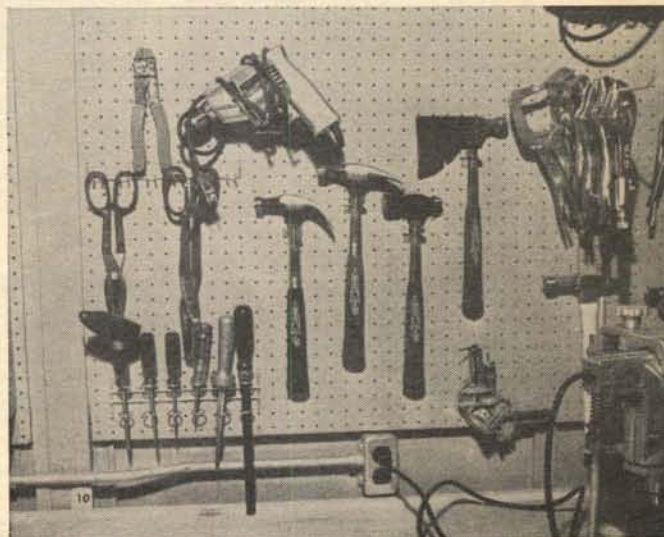
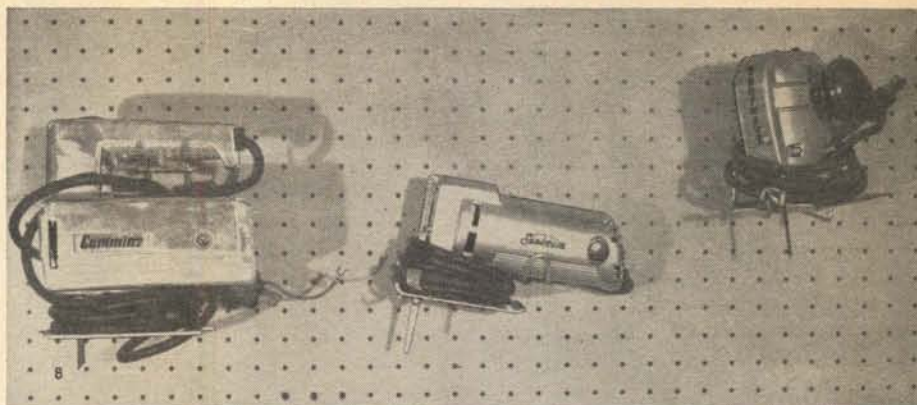


the saw motor can be removed and used as a portable saw. This tool will be covered in a future article on saws. Because of the great number of tools in the shop, descriptions of each necessarily must be brief. However, all the tools are constantly being used and tested by members of the editorial staff, and articles on individual types of tools will appear in early issues of **WORKBENCH**. The constant using and testing of the tools will assure accurate descriptions of the functions and potentials of the tools. If any of you are in

our neighborhood, drop in for a visit. Let us know a day ahead so we can clean up the shop and get the tools set up. Because we use the shop for photography, the tools are shuffled about, and some even taken out of the shop temporarily.

For those readers interested in a particular item, or items, a list will be available, giving the full address of the manufacturers of all the tools shown or mentioned in this article on the Model Shop. Just write and ask for the Model Shop List.  $\Delta \Delta$

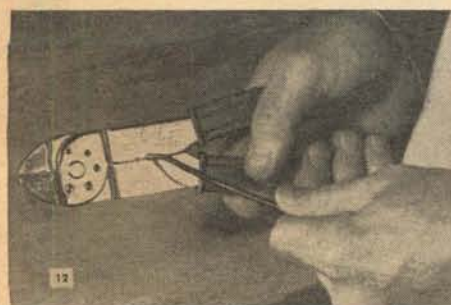
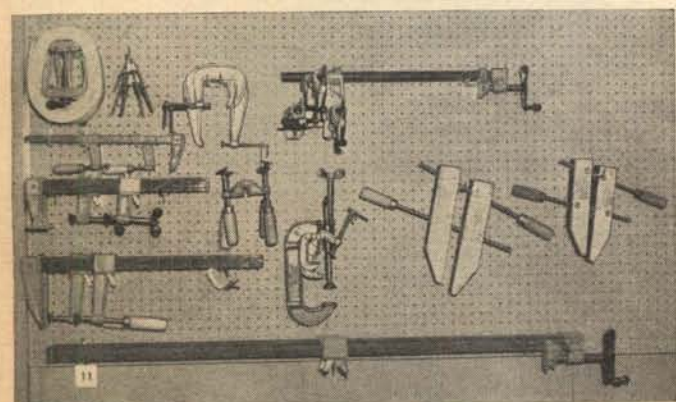
8. Shown here are three of the jig, or saber, saws used in the Model Shop. Left to right, Cummins, Sunbeam and Shopmate. The Wen Allsaw, although a jig-saber saw, has a large capacity and is shown with the circular saws. Note that the saws are hung on Masonite Peg-Board, using Peg-Board fixtures.



9. The Dremel Moto Shop, featured in our last issue, is shown here with the flexible shaft on the power take-off being used to drive a small drum sander. A rough spot on the head of our Champion DeArment electrician's hammer is being smoothed.

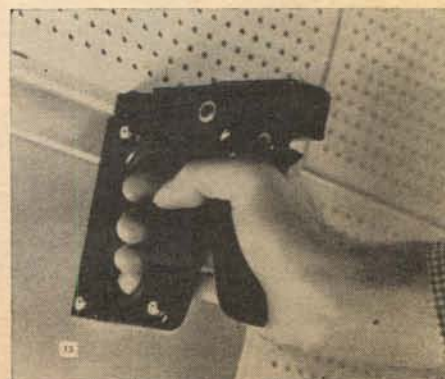
10. Peg-Board immediately over the bench holds our True-Temper hammers and hatchet, Bluebird tin snips, Power Egg screw driver, Jab Saw, Vaco reversible screw driver, Surform rasp and Vaco wire stripper. Other tools are described elsewhere.

11. Indispensable in any workshop are clamps. Upper left is strap clamp for clamping completely around a glued assembly. At upper right are clamp fixtures, with one set of fixtures slipped on length of pipe to show how they are used. From Adjustable Clamp Co.

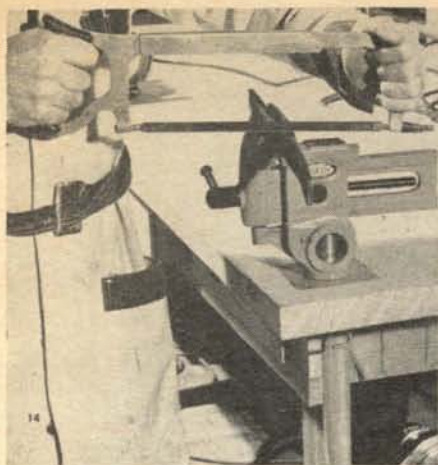


12. This Vaco wire stripper eliminates the problem of cutting strands in stranded wire, strips insulation cleanly, cuts wire, renews threads on bolts. Indispensable tool for electrical work.

13. Bostitch model T5 tacker uses staples up to 9/16 in. Ideal for installing ceiling tile, insulation and variety of other materials quickly and easily. Stapler should be in every shop.



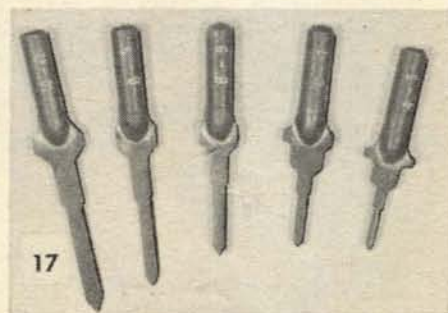
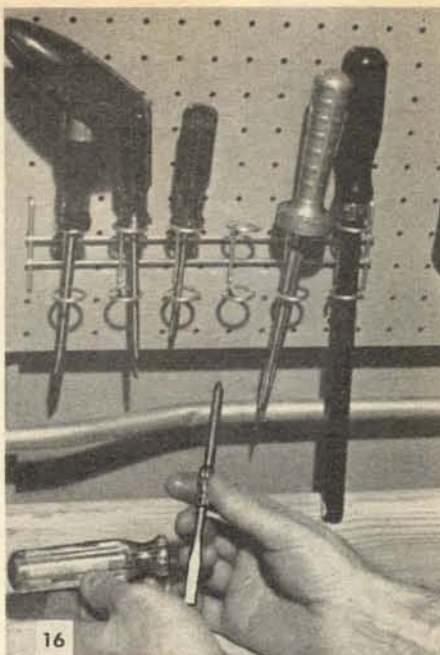
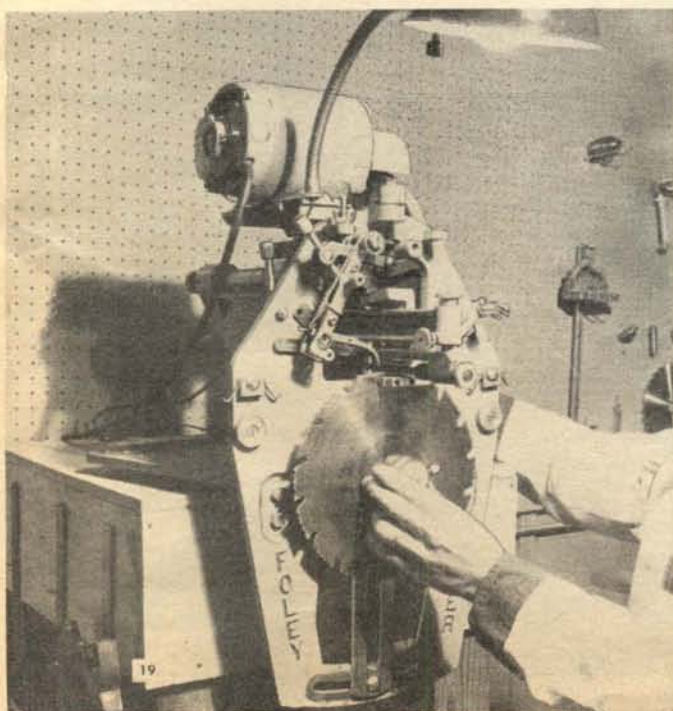




14. Versatile Versa-Vise is being used here to hold steel flat being hacksawed. A vise is an absolute must for any workshop.

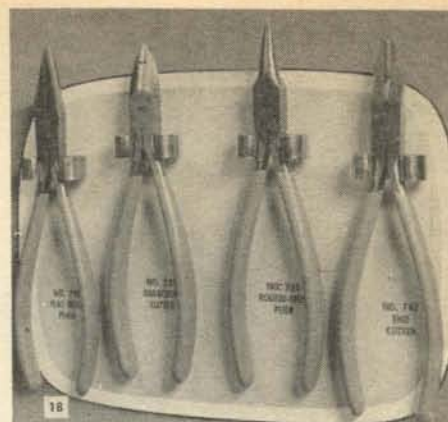
15. Not the usual workshop item, this Mixel mixer will handle concrete, mortar, paint, dry materials, can be operated by one man with ease.

16. One end of reversible Vaco screw driver is for Phillip's-head screws, the other is a straight blade for slotted screws.



17. Screw-Pilots for hand or electric drills make countersink or counterbore for screwheads, drills pilot hole and shank-clearance in one operation.

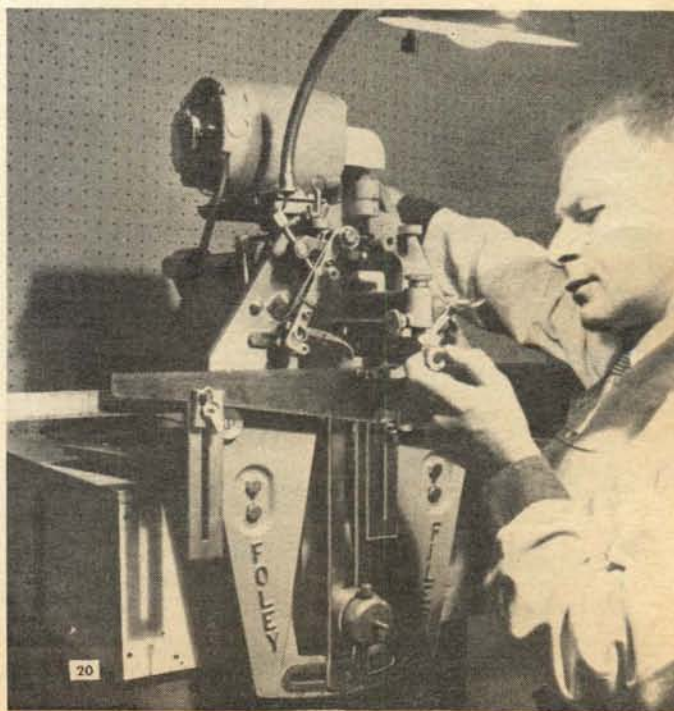
18. Our selection of Channellock electronic pliers has been a big help in the assembly of hi-fi kits, to be shown in a future issue.



"Care to see my workshop?"

19. A combination circular-saw blade is here being set up in the Foley Automatic Saw Filer. We made the stand ourselves.

20. Here we are getting the Saw Filer ready to resharpen a hand saw. This machine is for the profit-minded home craftsman.



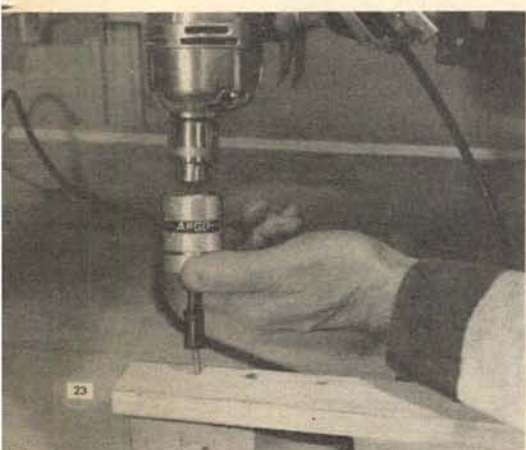




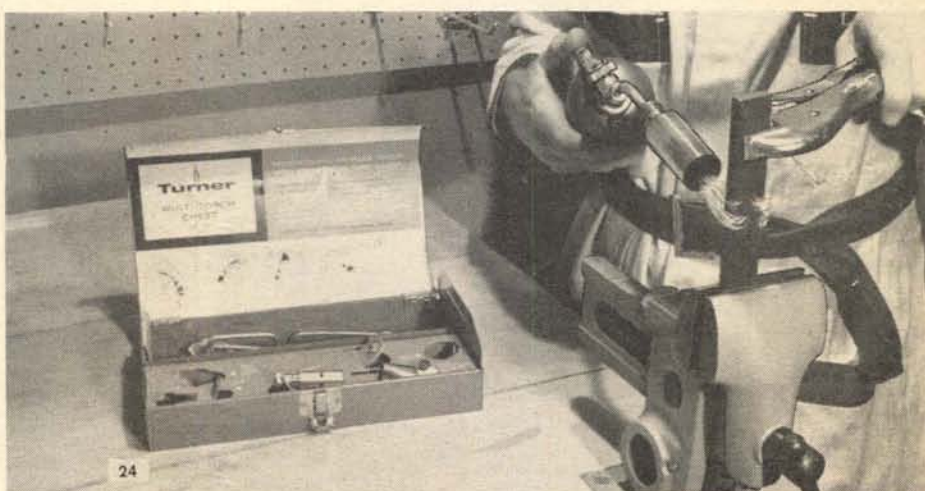
21. Our Stanley Portable Router proved to be the ideal tool for routing the recess into which the Versa-Vise flush base was fitted. The router power unit also fits into a portable plane.



22. This Belsaw Combination Tool is a real money maker, converting rough planks or wood-lot lumber into finished material. It will saw, shape and plane a plank 12 in. wide in one pass. Any individual operation, or combination of operations also can be performed by the machine.



23. Black and Decker Power Driver is used as drill motor to drive Arco Screw-Matic that converts any 1/4 in. or larger drill motor to a power screw driver, saving time, driving screws solidly into the wood.



24. One of our two Turner propane torches is being used here to heat a flat bar for bending. This torch is complete with metal case, several sizes and types of tips. This model is Trig-R-Trol that has constant pilot, flame size is increased by pressing trigger lever with one hand.

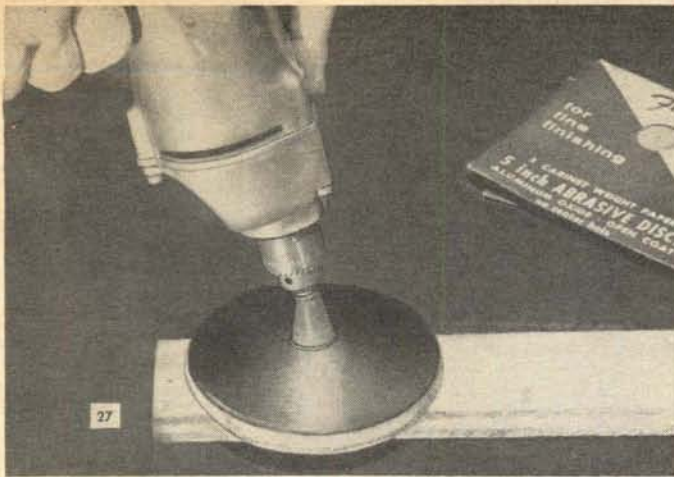


25. Lightweight gun of this handy paint-spray outfit is all plastic. Motor unit is carried easily with one hand. Changing needle and nozzle permits outfit to spray multi-colored paints.



26. Our complete set of Peterson Vise-Grips has new quick-release trigger on the handles. Curved and straight-jaw are familiar types, C-clamp type, set with flat-plate jaws for sheet-metal work and one with forked-jaw for holding work to be welded are just as versatile and handy.

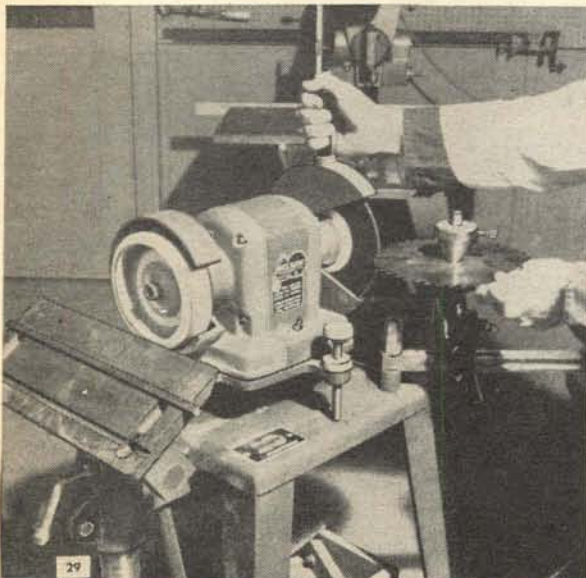




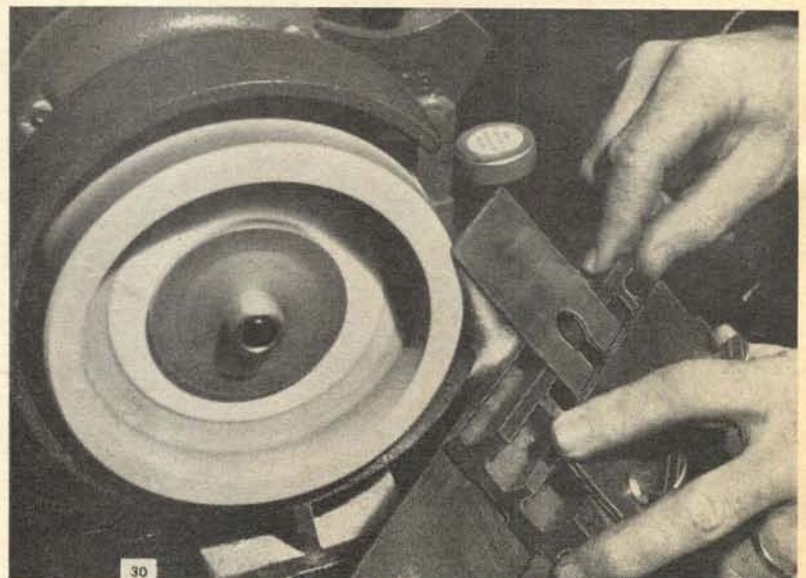
27. Flexan disk sander has flexible shank that makes surface sanding easier and more accurate. Because shank does not control disk directly, angling drill does not cause disk to gouge on edge.



28. Another advantage of Flexan disk is that sandpaper is applied over full surface by contact adhesive, so there is no center hole to reduce area of sanding. Cushioned back assures gentle-action sanding.

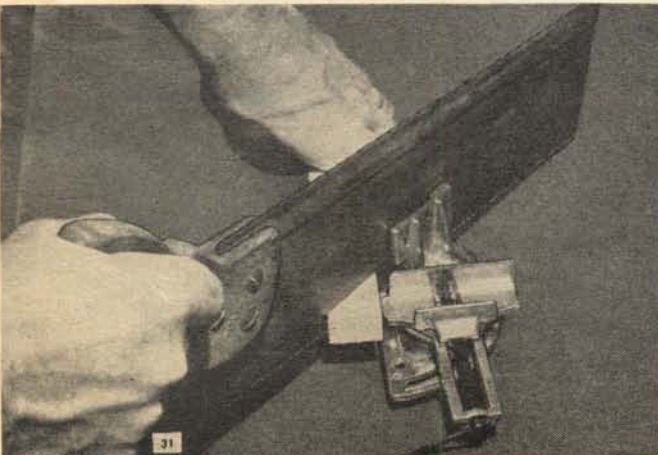


29. Belsaw grinder is sharpening circular saw blade with specially-shaped wheel. Blades can be trued round, teeth set with accessories on this flexible, profit-making machine.

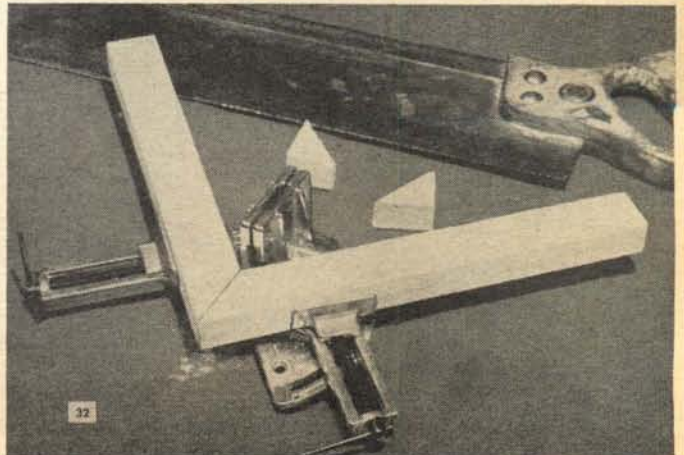


30. Stone on opposite end of Belsaw Saw Grinder is used for sharpening plane irons, wood and cold chisels, all sorts of cutting tools. Adjustable table and fixtures hold tools at exact angles for accurate sharpening.

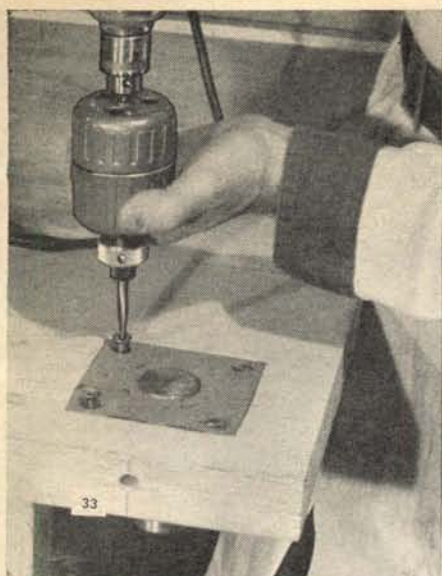
31. Drumcliff corner clamp with miter attachment makes cutting and fitting miters a foolproof operation. Each member first is clamped and sawed with backsaw to get exact 45 deg. angles on the ends.



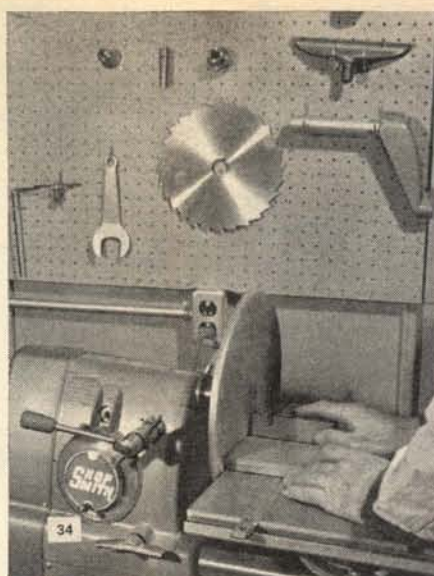
32. After angles have been cut on individual pieces, they are fitted in clamp, then nailed or glued. Note how exact miter cut is. When used extensively, clamp is screwed to corner of the workbench with three screws.



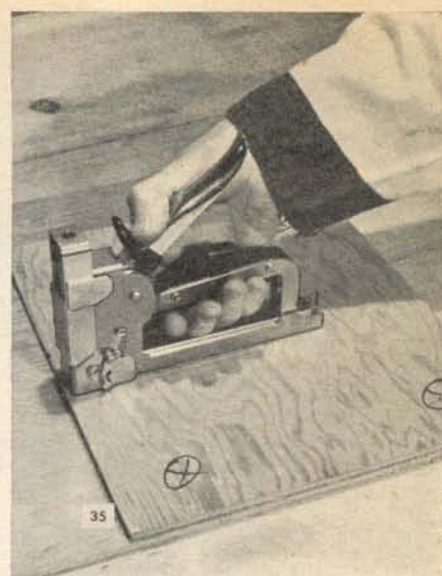




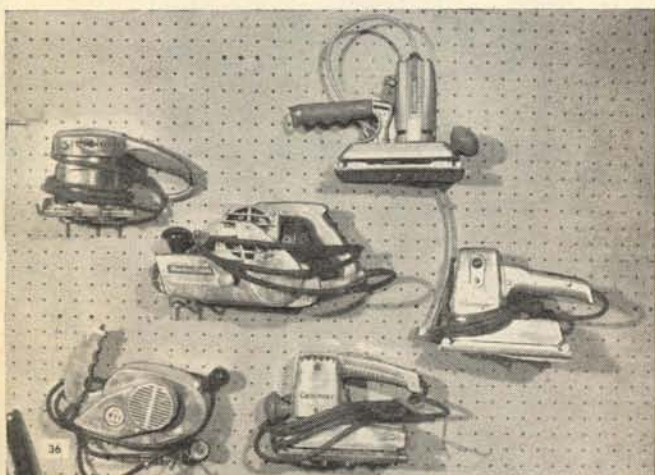
33. Supreme Versamatic reversible power screw driver is used here to drive screws through vise base on the corner of the Model Shop workbench.



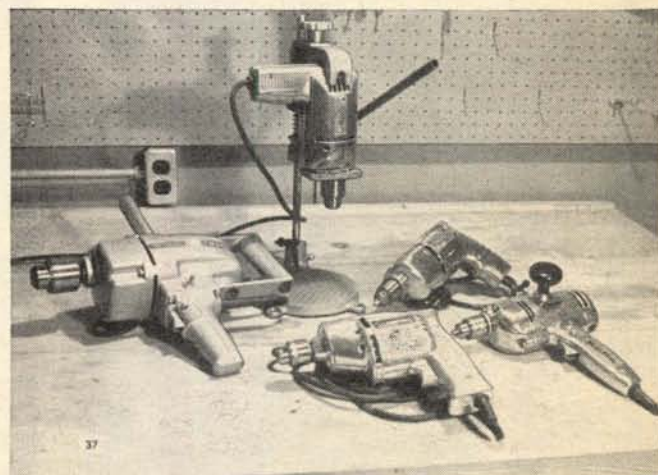
34. Miter gauge on table is being used here to hold square a wooden block being smoothed on disk sander of Mark V Shopsmith.



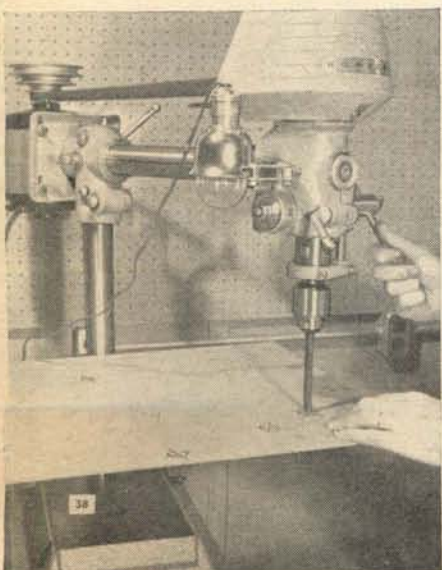
35. One of the many uses for our Duo-Fast CT-859 Staple Tacker is to hold members together temporarily for drilling accurately aligned holes.



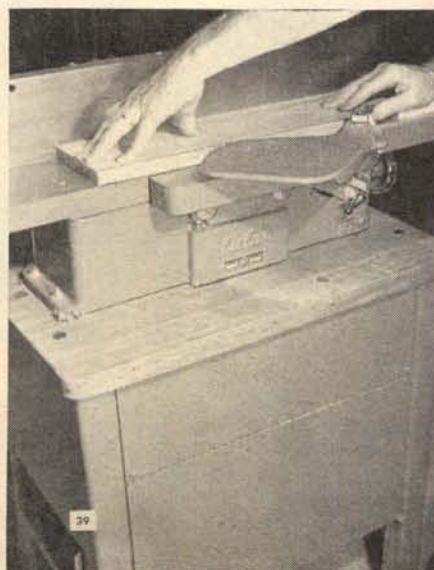
36. Our very complete collection of belt, orbital and combination orbital-straight-motion sanders is so extensive that they will be described in a separate article in a future issue of WORKBENCH.



37. Our selection of drill motors ranges from the reversible 1/2-in. Shopmate, 3/8-in. Speedway, 1/4-in. Shopmate, 1/4-in. Dormeyer and 1/4-in. Black and Decker Power Driver. The Skil 1/4-in. drill motor is shown elsewhere.



38. Arriving too late for the cover photo, this Homecraft Radial-Arm drill press is shown with fully extended arm drilling in a sheet of hardboard. Drillhead rotates almost 360 deg.



39. If you want your lumber to be smooth, the edges exactly square so they can be edge-glued to make a table top, etc., you can't beat this Atlas 6-in. jointer.

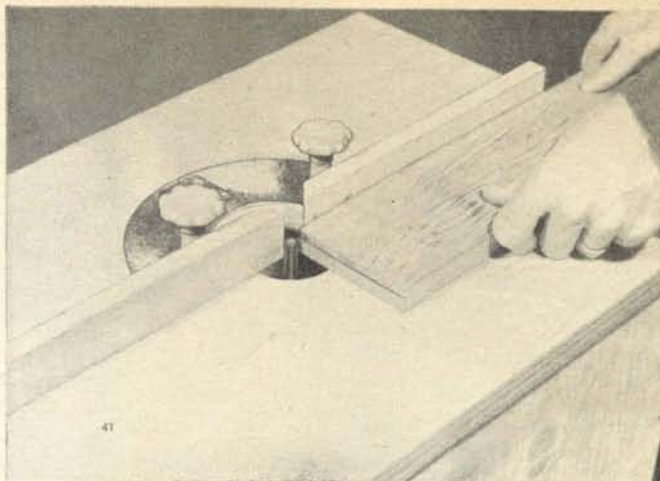


**"You never looked at me like that!"**

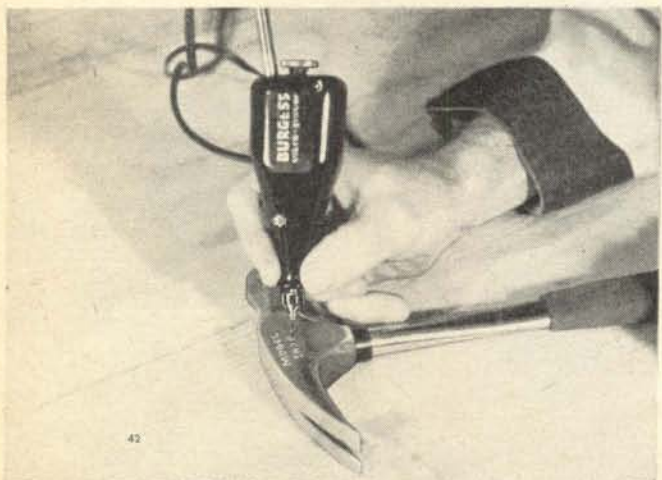




40. Millers Falls Dyno-Mite router is used here with its portable base to rout out recess in board. Router is indispensable when doing inlay work, and for many operations when doing fine cabinetwork.



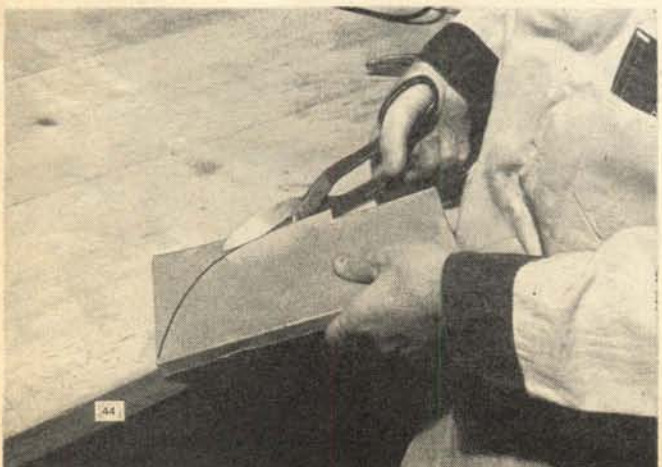
41. When Dyno-Mite router is fastened to its table, as here, it becomes shaper, can be used to square up edges of lumber for edge-gluing. Adjustments on each fence permit width of cut to be controlled.



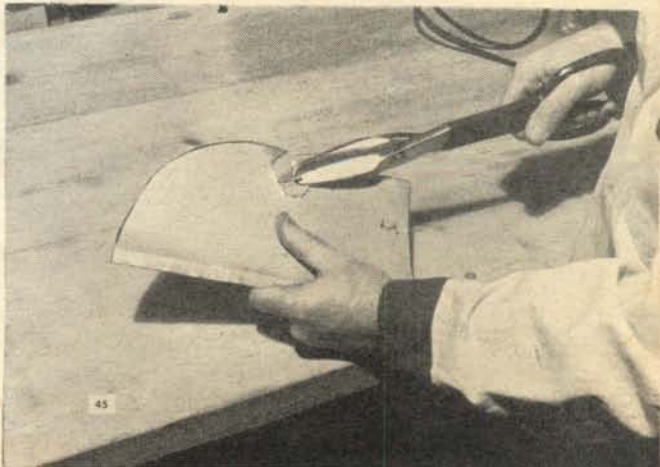
42. Burgess Vibro-Graver, that can be used to engrave metals, plastic, glass and many other materials is used to mark the head of one of our True-Temper hammers. All tools are being marked with the Vibro-Graver.



43. Larger model of Burgess engraving tool is called Vibra-Tool, and has many attachments for variety of work. Included in set, fitted in metal case, are stones, burrs, knives and various points.

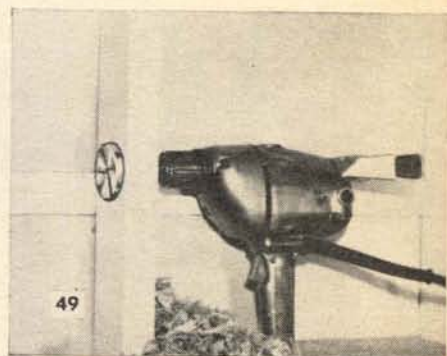
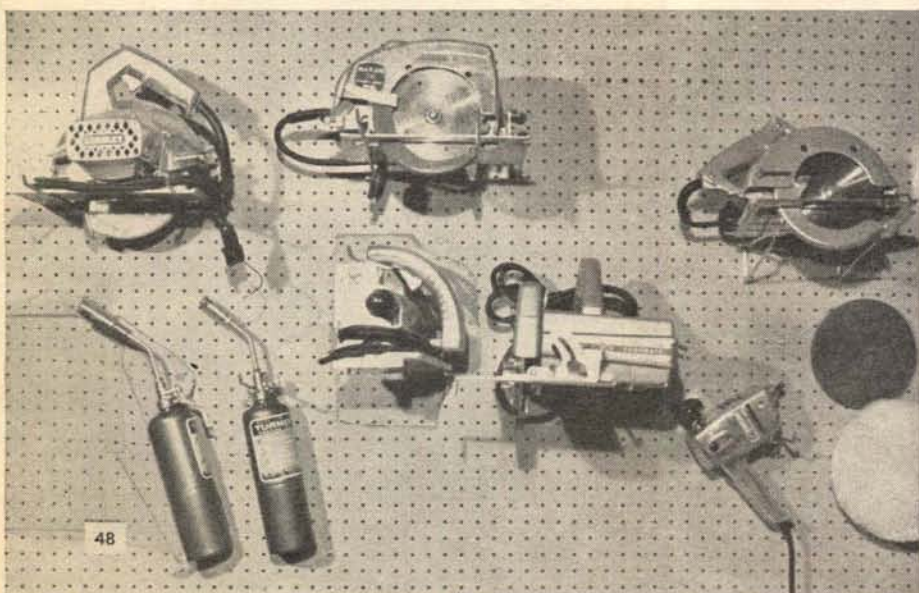
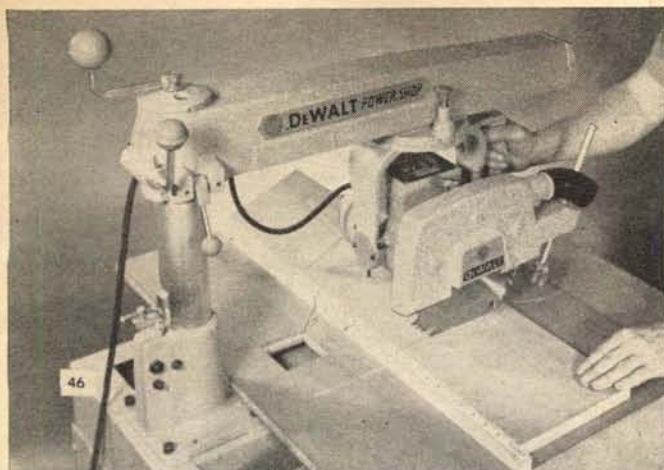


44. Our Bluebird straight snips do a neat job of cutting straight lines and gentle curves in sheet metal. A good pair of straight snips are a must in any workshop and we can recommend the Bluebird brand.



45. For those hard-to-get angles and curves, these Bluebird corner snips are ideal. If you have ever tried to cut an extremely irregular line in sheet metal, you know how handy these snips can be.





46. Basic DeWalt Power Shop is radial-arm saw, can be fitted with many attachments to make it drill, lathe and shaper. As saw it is extremely versatile, ripping, cross-cutting and plowing.

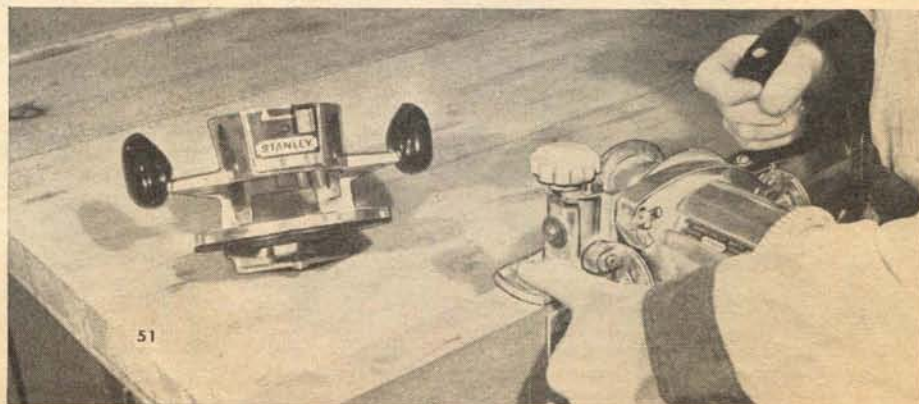
47. Dormeyer kit includes 1/4-in. motor, metal case, circular saw, disk sander, polishing bonnet and stand for making it fixed horizontal unit. This set is ideal for the man with limited space and finances, will handle many jobs.

48. Portable circular saws include Stanley, Maxaw, Shopmate and Sunbeam. Wen Allsaw is next to Shopmate. Low-speed Dormeyer polisher is at lower right, with sanding disks and fleece bonnet. Turner torches at left.

49. Time-Saver drill bit used in 1/2-in. motor drills oversize hole, can be fitted with extensions to drill horizontally through wall studs, or vertically from top to bottom plates of wall or partition.

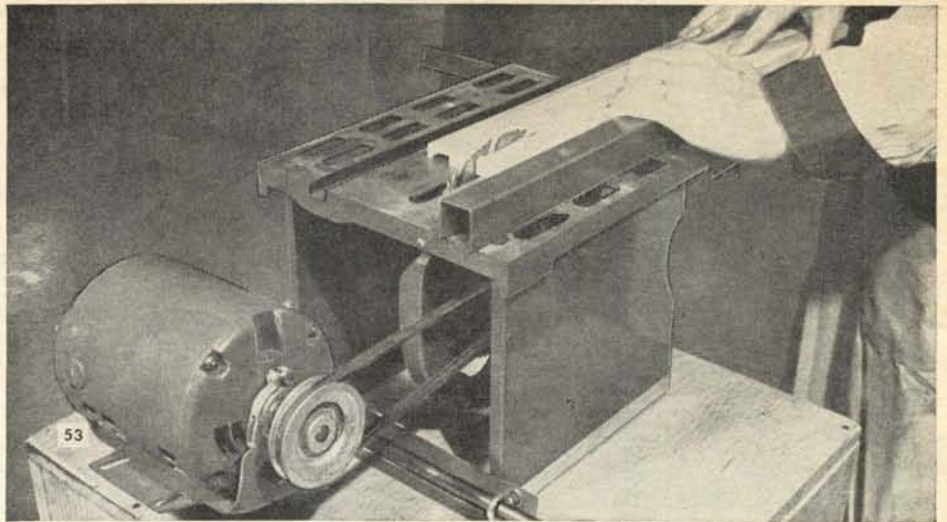
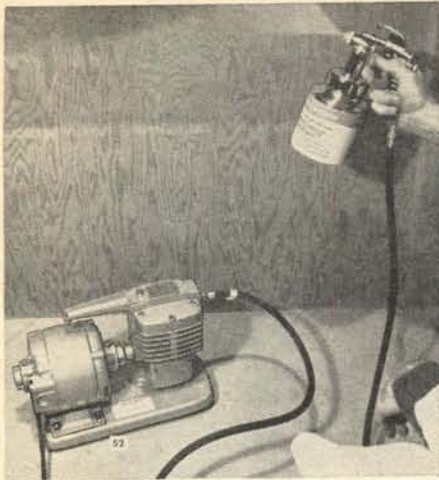
50. Black and Decker Power Driver shown with one of several attachments designed for it. This hedge trimmer has been tested and used extensively, found to do an excellent job of clipping heavy hedges and shrubbery.

51. Other half of personality of Stanley router-planer permits it being used as planer. Simple change of bits and housings makes it a labor and time-saving power planer that really removes the wood and does it cleanly and smoothly.

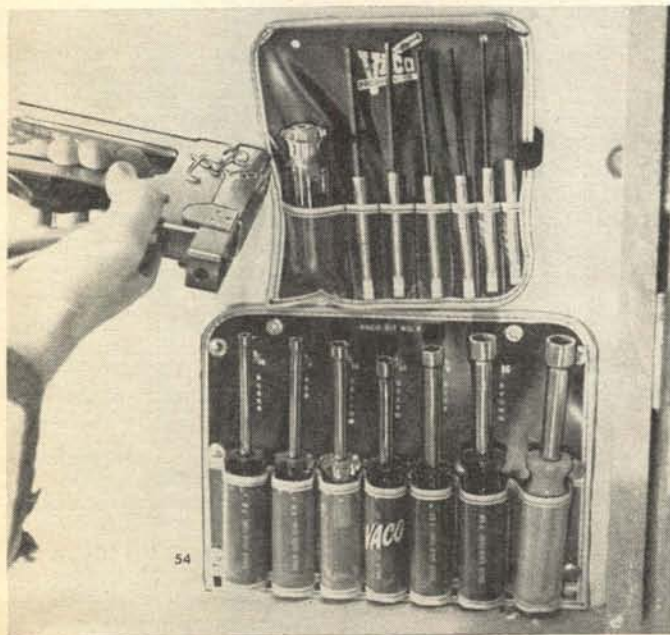




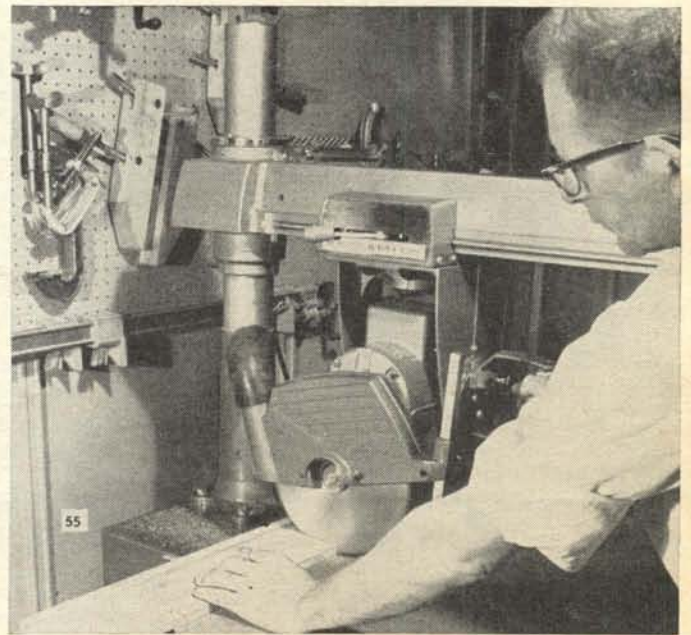
52. Relief valve in this Speedy Sprayer compressor permits using constant-bleed gun furnished, or non-bleed gun. Set is easily carried.



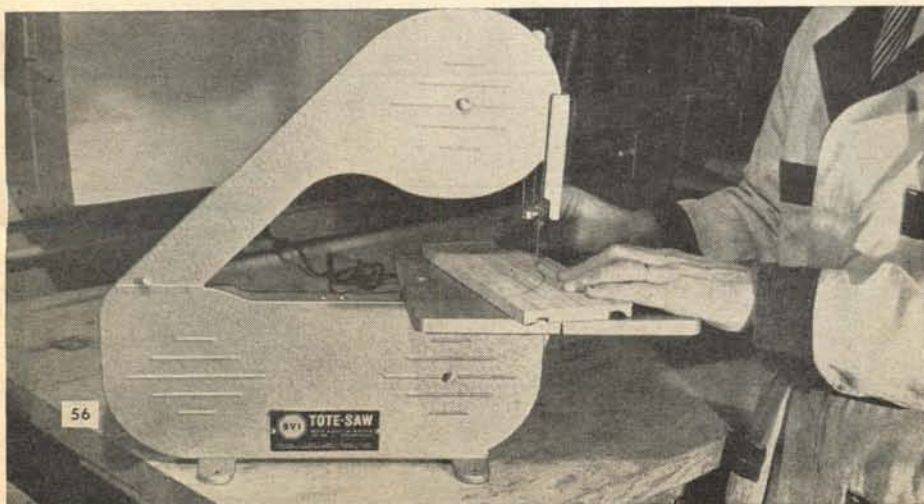
53. Plana-Centric 8-in. tilting-arbor saw is small enough to be carried about, strong enough to do heavy ripping and cross-cutting of lumber. Table extensions are available.



54. Vaco socket and Allen-wrench sets are stapled to inside of cabinet door. Plastic holders can be rolled and carried, made to stand up on bench.



55. Sawsmith radial-arm saw has adjustable table, adjustable speeds, will accept most attachments used on Shopsmith combination tool.



56. Burgess Tote-Saw is portable bandsaw with built-in motor. Using different types of blades, can cut wood, plastics and even metal of fairly heavy gauge.



**"The most horrible sound I ever heard was my \$15 saw blade hitting a 30-penny spike."**



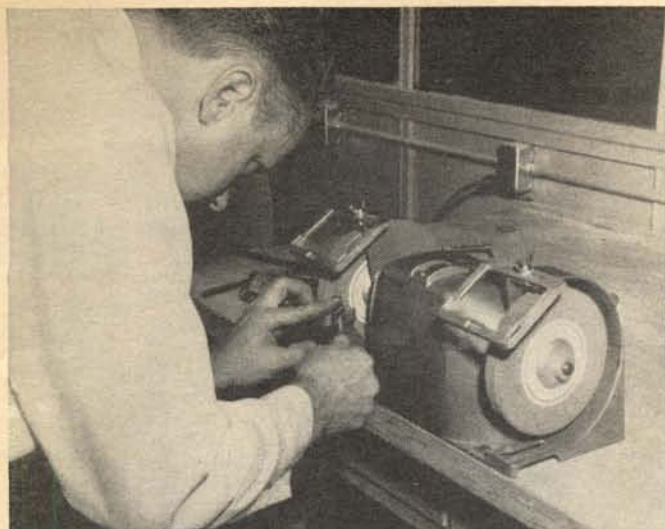


FIG. 1. Notches in guide position bits on this grinder.

# Drill-Bit Maintenance

M. ROBERT BEASLEY

BROKEN DRILL BITS quite often are the result of incorrect grinding. Bits ground properly and maintained in good cutting condition will last a long time, while those improperly ground have a short useful life and produce inferior work. It takes skill and practice to sharpen drill bits by hand, but jigs such as in Fig. 7, available from Albert Constantine Co., are an excellent substitute for skill and assure consistent results. The face of a medium-grit grinding wheel is used with the jig, and for most free-hand sharpening of drill bits. Exceptions

occur as in Fig. 1 where the Thor Speedgrinder has angled notches cast in the guide to position drill bits against the side of the wheel.

Point angle, Fig. 4, should be equal on both cutting edges, although it may vary as in the chart, and the chisel-point center of the bit should be at an angle of from 120 to 135 deg. from each cutting edge, Fig. 2. If one cutting edge is ground at a greater angle than the other, Fig. 5, only one edge will cut and the hole will be elongated. When both cutting edges have equal angles, but the

point is off-center, Fig. 6, an over-size hole will result. To assure that the cutting edges are slightly higher than the rest of the surface, the metal behind each edge is "relieved" at an angle of 12 to 15 deg., Fig. 8. Because the webs of a bit increase in thickness toward the shank, it sometimes is necessary to thin these webs as the bit is shortened by grinding. Metal is removed from both sides of the webs, Fig. 3, but each web should be no less than  $\frac{1}{8}$  the diameter of the bit. Drill-bit troubles and remedies are shown at the bottom of this page.  $\Delta \Delta$

TROUBLE	CAUSE	REMEDY
DRILL BREAKS	Dull Drill Insufficient lip clearance Backlash in press or work Chips don't clear drill Speed-Feed ratio improper	Sharpen drill Regrind properly Stiffen and align press and work Correct application Increase speed or decrease feed
CUTTING EDGES BREAK DOWN	Too much speed Improper cutting compound No lubricant at drill point	Reduce speed Use correct compound Correct application
HOLE TOO LARGE	Loose Spindle  Unequal angle or length of cutting edges	Check spindle for rigidity Regrind properly
ROUGH HOLE	Dull or improperly ground Wrong or no lubricant Feed too high	Regrind properly  Use proper lubricant Reduce feed
SPLITTING UP CENTER	Insufficient lip clearance Too much feed	Regrind drill  Reduce feed
TANG BREAKS	Poor fit between taper- shank and socket due to chips or burred and worn socket	Clean socket and shank  Replace worn socket
ONLY ONE LIP CUTTING	Length and angle of cutting lip improper	Regrind drill



# LIP-CLEARANCE ANGLE

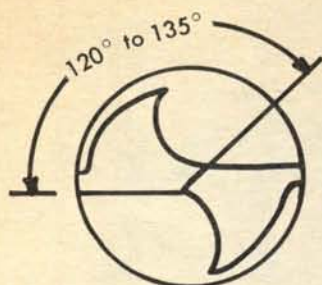


FIG. 2

# POINT THINNING



FIG. 3

# UNEQUAL ANGLES

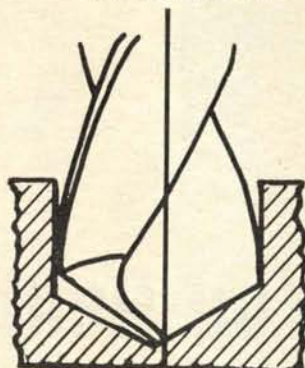


FIG. 5

# POINT ANGLE

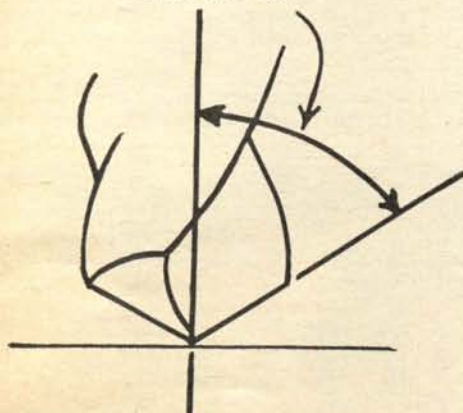


FIG. 4

# OFF-CENTER POINT

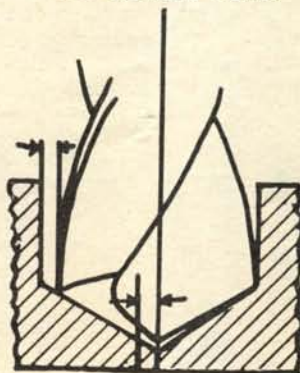


FIG. 6

# RELIEF ANGLE

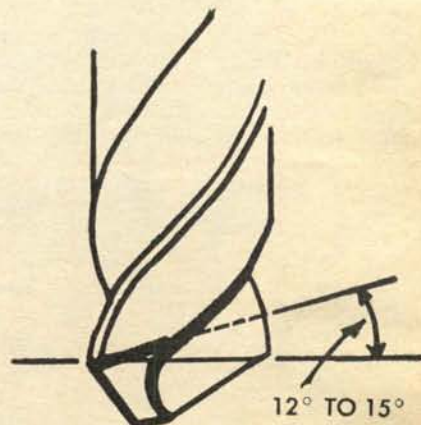


FIG. 8

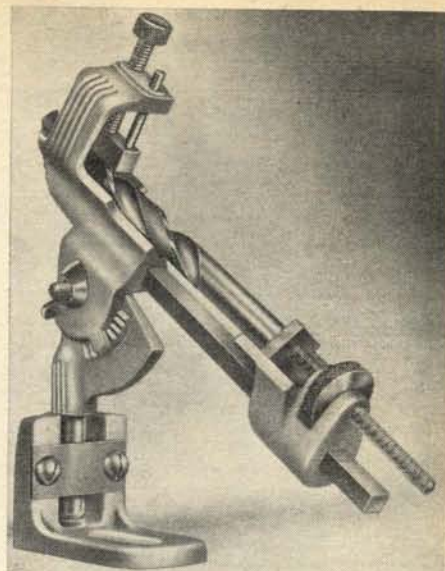


FIG. 7. Drill-grinding jig simplifies sharpening.

## DRILL BITS

## CARBON STEEL HIGH-SPEED STEEL

## CARBIDE

MATERIAL DRILLED	DRILLING SPEEDS (FT. PER MIN.)			POINT ANGLE
ALUMINUM	125-150	250-300	—	45 deg.
COPPER ALLOYS	50-100	100-200	150	50 deg.
CAST IRON	30-50	75-110	80-120	45 deg.
CHILLED CAST IRON	15-20	30-40	30	45 deg.
MAGNESIUM	125-200	250-400	—	68 deg.
MONEL	25-35	50-70	80-95	68 deg.
PLASTICS	50-75	100-150	100-150	59 deg.
STEEL, CARBON	35-45	70-90	125-150	62½ deg.
STEEL, ALLOY	25-30	50-60	100	68 deg.
WOOD	150-200	300-400	200	45 deg.





HEAVY-DUTY extension cord and electric hedge clippers are rented for once-a-year trimming of shrubbery.



OWNER of tool-rental shop explains workings of concrete mixer to the author who is going to pour a back yard patio.

# Should You Rent or Buy Tools?

FRANK BARTONEK

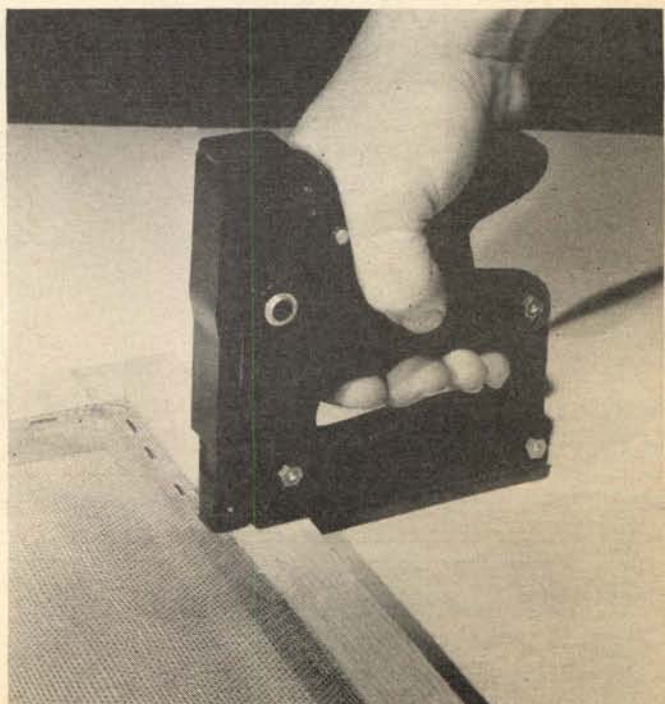
LIMITED TIME is the problem with most home craftsmen, and power tools are necessary. How do you decide whether a certain tool should be purchased or rented? While every craftsman has individual problems, certain factors hold true for anyone. If a tool is to be used several times, and

the rental cost will add up a fair percentage of the price of the tool, or even a good down payment, the tool should be purchased. Even large items, such as concrete mixers, should be purchased, perhaps in partnership with a neighbor, if they are to be used extensively. After a

season or two of use a mixer can be resold and part of the purchase price recovered. A possibly overlooked advantage of renting such tools as portable electric saws, is that various makes can be compared to help you select the one you like best. Some rental shops will deduct the rental



EXTRA-LARGE drill bits and larger electric drill motors are the type of tool that it usually is best to rent before buying. Photo courtesy Black and Decker Mfg. Co.

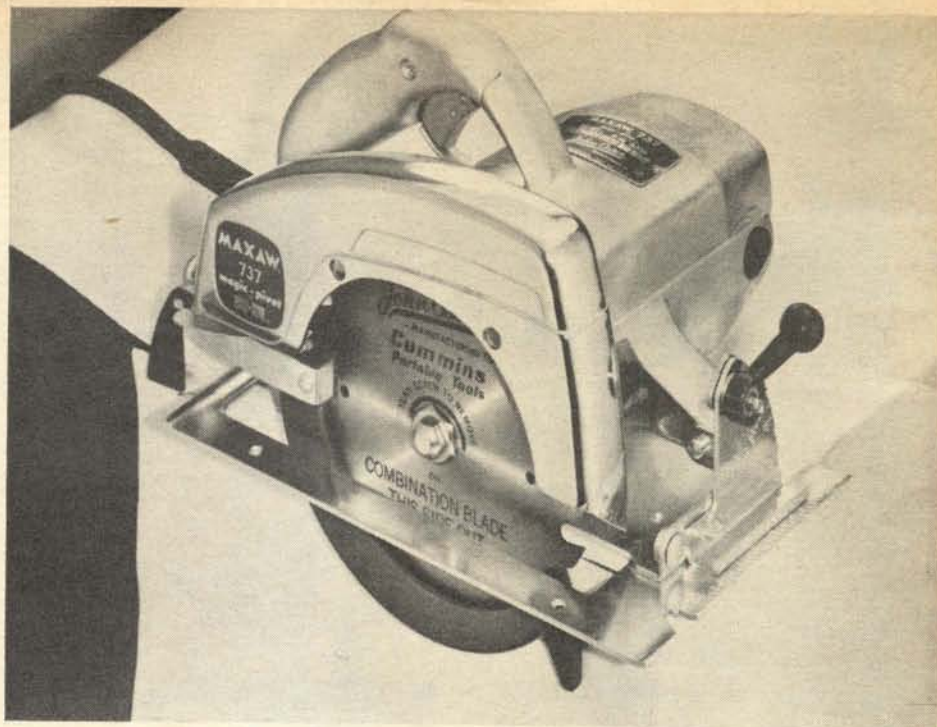


RENTING a staple gun such as this one (Bostitch) often convinces a homeowner that he should purchase one of his own. Photo courtesy Bostitch Co.





BESIDES RENTING TOOLS, rental shops often carry an extensive line of paints and supplies.



FOR ROUGH CARPENTRY, as when building a garage or adding a room, few tools are of more use than a portable electric circular saw.

*Photo courtesy Cummins of John Oster Mfg. Co.*

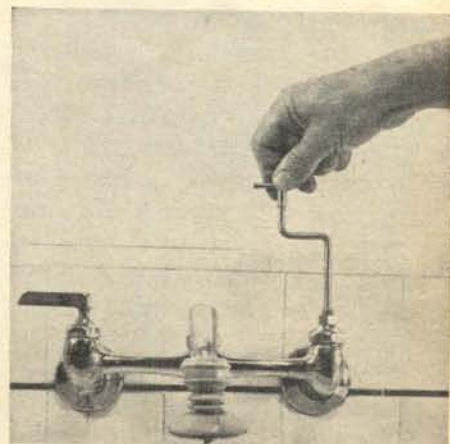
fee from the price if you later purchase a tool. Also, until you rent such tools as staple guns, you never realize just how useful such a tool can be.

Convenience often is the determining factor for such tools as faucet-seat resurfacers that are fairly low in cost. Faucets start leaking at unpredictable times, and the conveni-

ence of having the resurfacer whenever needed justifies its cost. Paint sprayers, oversize bits and large hole saws that are needed very infrequently are examples of tools that the usual craftsman should rent. But, even in the case of these tools, your own particular needs will determine whether to rent or buy.  $\Delta \Delta$

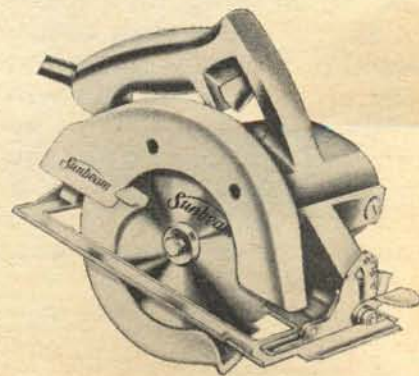


ONE VERY DEFINITE ADVANTAGE in renting larger items, such as wheelbarrows, power mowers, seed spreaders and the like is that you have no storage problem for items used infrequently.



LOW COST of faucet-valve refacer (about \$2) makes it the type of tool that should be purchased and kept handy in the workshop.

*Photo courtesy O. Olson and Co.*



RENTING portable circular saws is an excellent way to determine which one you want to buy.

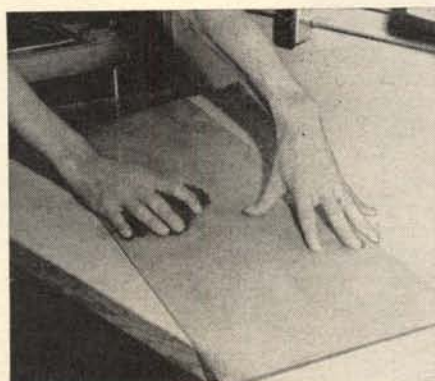
*Photo courtesy Sunbeam Corp.*



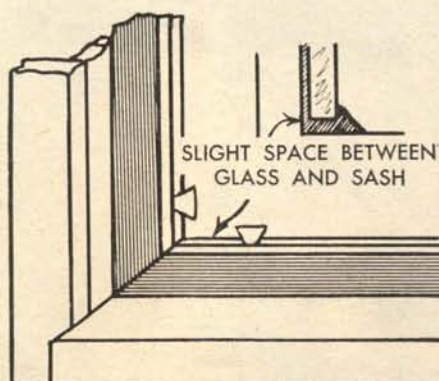
# Glass Replacement

EDWARD BENTLEY

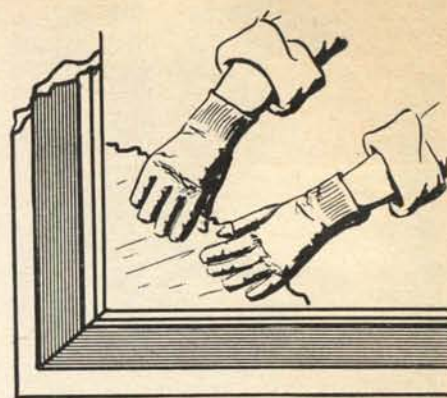
Summer, winter, rain or shine, broken window panes must be replaced. While the replacement job actually is quite simple, there are a number of tips on how to replace the glass more solidly and make it weatherproof. Cutting a pane of glass often proves a problem, and if your glass cutter is old and rusty you will save time and money by simply throwing it away and buying a new one. If it has been some time since you cut glass, get a scrap and practice the cutting and breaking on the scored line. Before replacing glass, check to see that the window frame is in good condition and that the joints are tight. A flexing frame will quickly break a glass pane by binding and twisting. On these two pages are shown a few tips on glass replacement. Some you will remember, some will be new and some should be read just to refresh your memory and help you to keep from making mistakes.



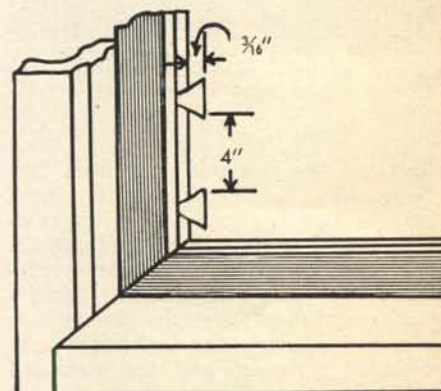
BEFORE CUTTING glass, clean it with a soft cloth moistened in turpentine. Wipe it dry with another cloth. Even the smallest piece of grit, or a greasy spot on the glass will prevent uniform cutting action of the cutter wheel. Place the glass on newspapers or a piece of felt.



PANE SIZE should be slightly smaller than the opening in a window frame. The pane should be from 1/16 to 1/8 in. shorter on both dimensions. This permits the putty to be forced between the glass and the wood to assure a weathertight seal and provide a shock-resistant mounting.



AVOID INJURIES when removing broken window glass by wearing canvas or leather gloves. For further protection, remove the putty and most of the glazier's points first. Then pull the broken glass toward you, which will direct flying slivers away from you. Keep youngsters away.

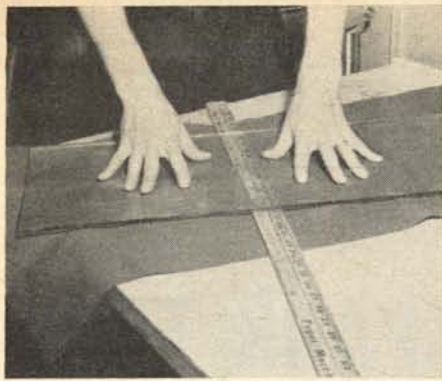


PROFESSIONALS RECOMMEND that glazier's points be set about 4 in. apart in a sash, and when seated, should project about 3/16 in. Points should be pressed flat against the glass and tapped into place with the side of a chisel. Special tools also are available for this job.

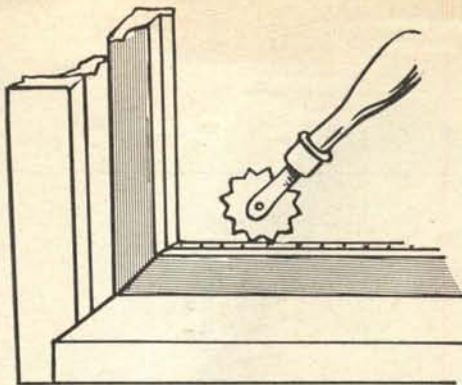


WHEN CUTTING glass, apply a steady, even pressure to the cutter, holding the cutter at almost right angles to the glass. Never go over a cut a second time. Begin the cut about 1/8 in. from the edge and draw the cutter across the surface in one continuous stroke to the opposite edge.

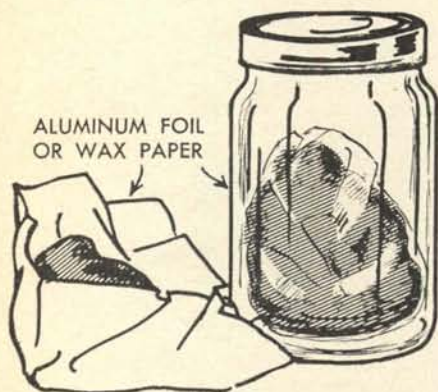




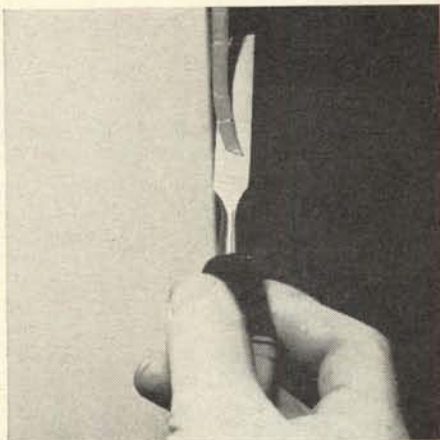
AFTER SCORING across a large piece of glass with the cutter, clean separation of the sections can be assured by placing a straightedge directly under the scored line and pressing down firmly on each side with equal pressure. Perform this operation on a flat, smooth surface.



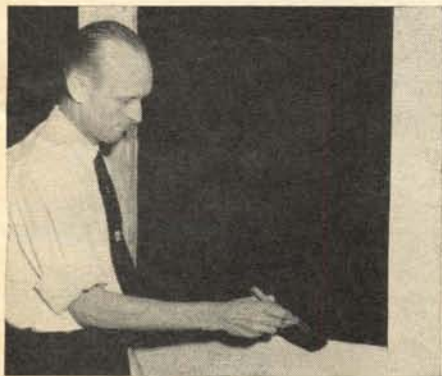
BETTER GRIP for the putty can be provided by using a steel tracing wheel to score two or three lines of perforations in the glass rabbet of a window frame. When applying the putty, press down firmly to force it into the perforations. Linseed oil should be painted on the frame, also.



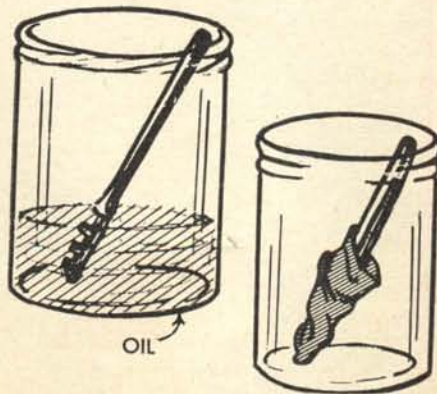
LEFTOVER PUTTY can be stored for long periods of time, with little chance of drying out, if it first is wrapped in heavy wax paper or aluminum foil, then sealed in a glass jar with a tight-fitting screw top. Mayonnaise jars are excellent for this, as are instant-coffee containers.



FOR QUICK cleaning of the old putty from a window frame, use a 1/2-in. wood chisel. Force the cutting edge between the glass and the putty, sliding the chisel along the rabbet so the putty is "peeled" away from the wood. For this job, the chisel need not be sharp.



PREVENT PUTTY from drying out quickly and becoming loosened in the window frame by coating the rabbet in the frame with linseed oil. The oil on the wood keeps it from absorbing the oil in the putty, thus assuring a weathertight seal for years, and preventing the putty from cracking.



EVEN NEW glass cutters should have a few drops of light oil applied to the wheel before they are used. Wipe excess oil from the wheel before using. Store the cutter in a container with an oil-soaked cloth over the wheel to prevent it from becoming rusty, or simply keep it immersed in oil.

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# SPARK TEST FOR STEELS

M. ROBERT BEASLEY

WORKBENCHERS WHO do welding or other kinds of metalworking eventually collect a supply of odds and ends of metal shapes, the same as a woodworker accumulates wood scraps. Identifying brass, copper or aluminum presents little problem, as the weight, color and appearance of these and some other metals is quite distinctive. However, various steel alloys look much alike, and these do present a problem. If mild steel is to be welded to high-tensile or manganese steel, ordinary mild-steel electrodes or welding rods cannot be used. Stainless steel, or other special alloy welding electrodes are required. Also, should two steel shapes be bolted or riveted together, drilling holes in the two types of steel will require that different drill speeds, and even different drill-tip angles, be used. This information is

in the drill article elsewhere in this issue. While low-carbon drill bits can be used for drilling mild steel, they would quickly dull if used in high-carbon steel. High-speed bits are required for drilling the latter alloy.

Identifying the various steel alloys actually is quite simple, and requires only a shop grinder of  $\frac{1}{4}$  h.p. or more, with a speed of 3450 r.p.m. or higher. In the Model Shop we ran tests with a  $\frac{1}{3}$  h.p. Thor Speed-grinder with a 6-in. stone. It is necessary in most cases to remove the grinding guide, as indicated. A guard on the grinder, such as shown, a face shield or safety glasses is an absolute must for eye protection.

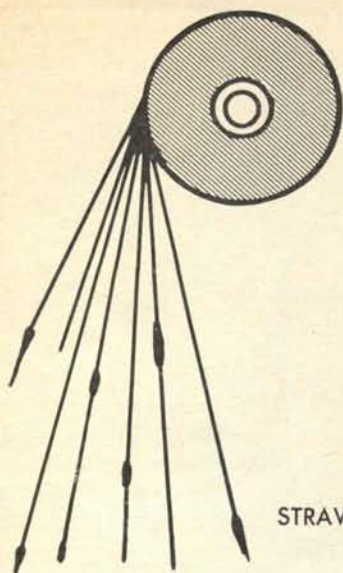
A piece of metal to be tested is held against the rotating grinding wheel with moderate pressure. Too much or too little pressure will change the general appearance of

the spark shower and make it difficult to "read." A dark background for the sparks is best, as they then can be seen more easily. One excellent method of checking yourself is to grind a piece of metal that you know is mild steel, high-tensile steel, etc. As indicated in the diagrams, each metal has characteristic sparks of a certain size, shape and color. You then can compare the sparks from the known metal against metal being tested. Whenever you purchase a particular kind of steel, make a spark test and write out the spark characteristics so they can be posted over the grinder. With the information over the grinder, it takes only a minute for you to test an odd piece of metal to see if it is the steel alloy that you want. Most common steel alloys are of standard quality with consistent spark characteristics.△ △

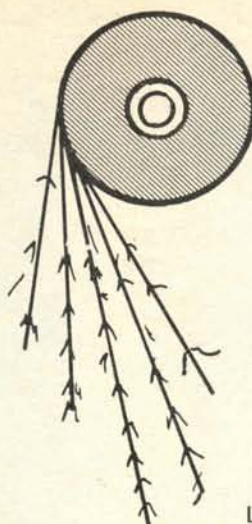


WROUGHT IRON

MILD STEEL

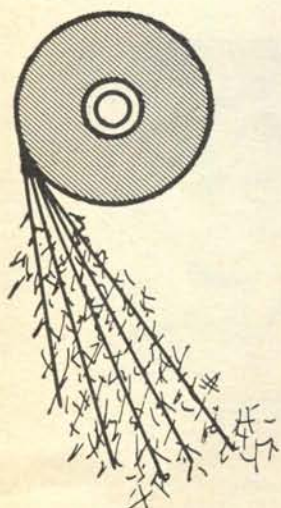


STRAW COLOR



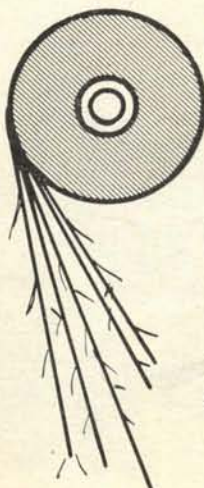
LIGHT STRAW

HIGH CARBON



WHITE

HIGH SPEED



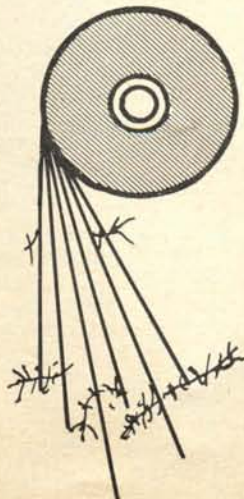
CHROME YELLOW

TOOL STEEL



WHITE

MANGANESE



WHITE

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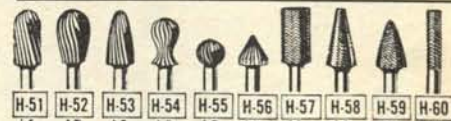
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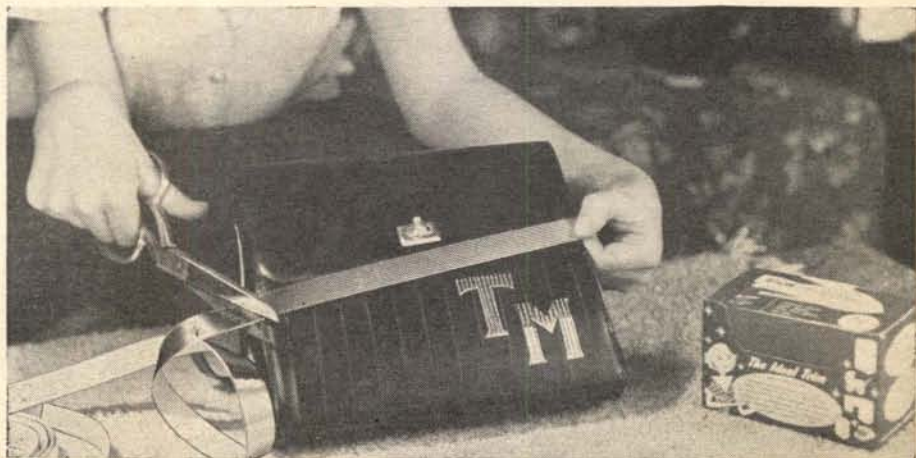
EVEN THE younger members of the family can use the metalized tape to make the ordinary shelves and toy chest in his room more attractive.



TIRED OF THE plain look of sanitary-white cabinets in your kitchen? Then trim them in accents of gold, chrome or copper to give them a sparkling, modern look.

# Metallic Tape

*Photos courtesy Marglo, Inc.*



IN THIS decorating idea the vase, table and clock are made to complement each other by being trimmed with fluted-pattern tape.



THAT PURSE that still is in good condition, but which has become much too familiar, will take on a fresh, new personality when trimmed with tape in one of the four patterns and three colors. Initials can be of a different color, and even a different embossed pattern.

GLEAMING HIGHLIGHTS of gold, copper or chrome will compliment furnishings in any decor, whether period or contemporary. And, when these patterned strips of metal can be applied simply by pressing them against a surface, the decorating job becomes one that any do-it-yourselfer can handle. Peeling the paper backing from the metalized Mylar (Du Pont TM) polyester strips exposes a contact adhesive that permits even a child to apply the material. Scissors or a razor blade are the only tools required for cutting the tape. Available in widths of  $\frac{3}{4}$  and  $1\frac{1}{2}$  in., in rolls from 6 to 35 ft. long, all sizes may be obtained in four embossed patterns—fluted, brush, cross-hatch and small-box. Shown on this page are just a few of the many decorating possibilities of this tape.  $\Delta \Delta$



HERE AN ordinary wall clock is framed in a burst of golden "sun rays" by notching the ends of varying lengths of metalized tape.



Unhappy housewives are the result of old-fashioned unhappy sinks that have no provision for storing detergents, scouring powder and other materials needed every day. Modernize that sink so it can provide storage even for pots, pans and other utensils.



COMPLETED SINK cabinet is modern, attractive and absolutely functional. Choice of hardware is determined by kitchen decor, or just according to whim of the boss of the kitchen.

## Modernize That Sink



THIS RATHER unhappy looking sink makes the whole kitchen unhappy, as well as the housewife who uses it. Articles seldom are stored beneath it because they simply make clutter.

*Photos and information courtesy Masonite Corp.*

NOTHING MAKES a kitchen look more old-fashioned and out-of-date than a sink that stands high above the floor with nothing but empty, almost unusable space beneath it. If you have this problem, but do not want to invest in a new sink here is a way to modernize the old one and provide always-needed storage space as well. A simple wooden framework is built under the sink—the *dimensions* will vary with the size and shape of the sink — and sheets of Masonite are used to close in the end or ends. Doors are constructed with wooden frames and the outside surface covered with tempered hardboard. The inner face of the doors are covered with Peg-Board to add to their utility. A detergent shelf is fitted on one of the doors, so that it swings out with the door for easy access. On the other side of the sink one shelf is fixed in place, while the other is built so it will slide out, again for easier access. Vertical panels of Peg-

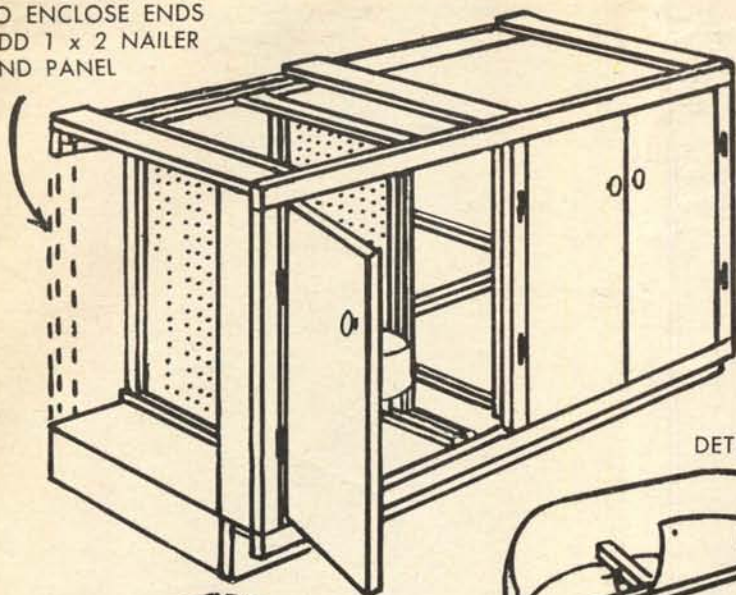


Board, on which pots and pans can be hung on fixtures, slide out for quick selection of the proper cooking

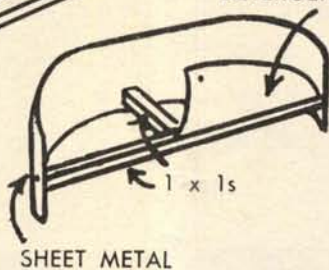
utensil. The vertical panels are positioned alongside the sink trap, making this normally unusable space

completely functional. The finished sink cabinet can be painted white, or any decorator color to suit. Should the sink be located on an outside wall where there is a heating problem, use Peg-Board wherever possible to assure adequate ventilation and flow of warm air.  $\Delta \Delta$

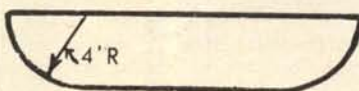
TO ENCLOSE ENDS  
ADD 1 x 2 NAILER  
AND PANEL



DETERGENT SHELF



SHEET METAL

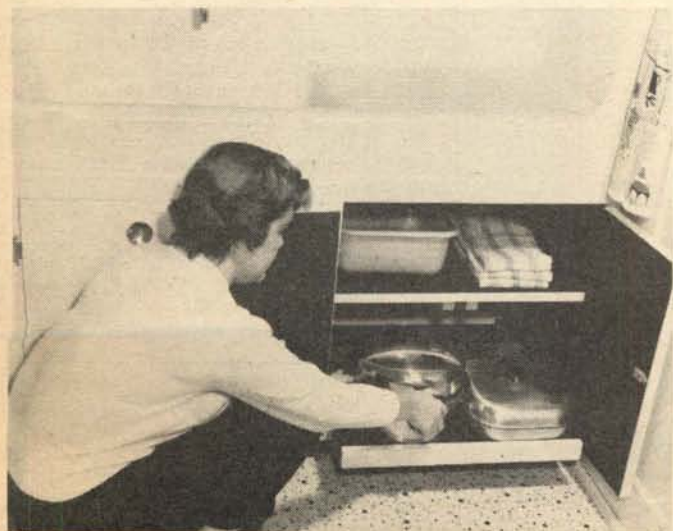


1/8" PEG-BOARD

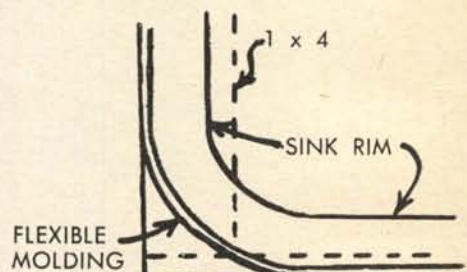
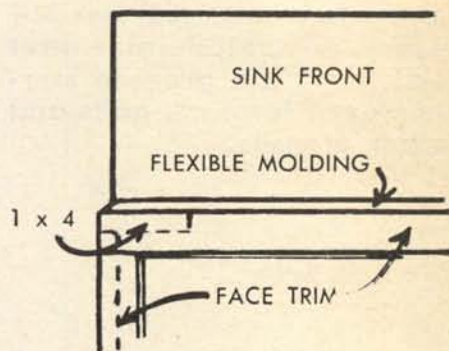
1 x 2  
FRAMEWORK

DOOR

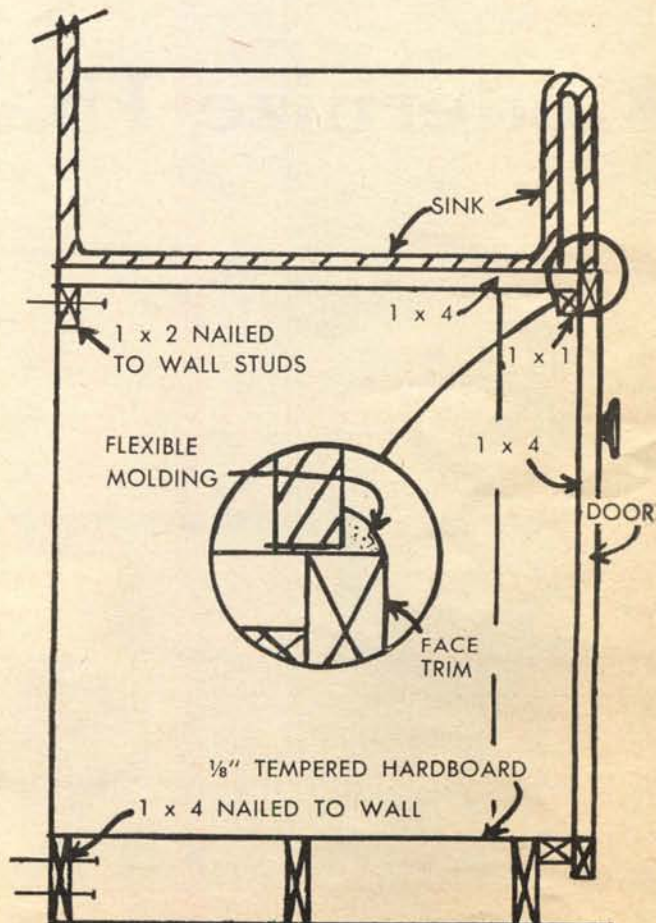
1/8" HARDBOARD



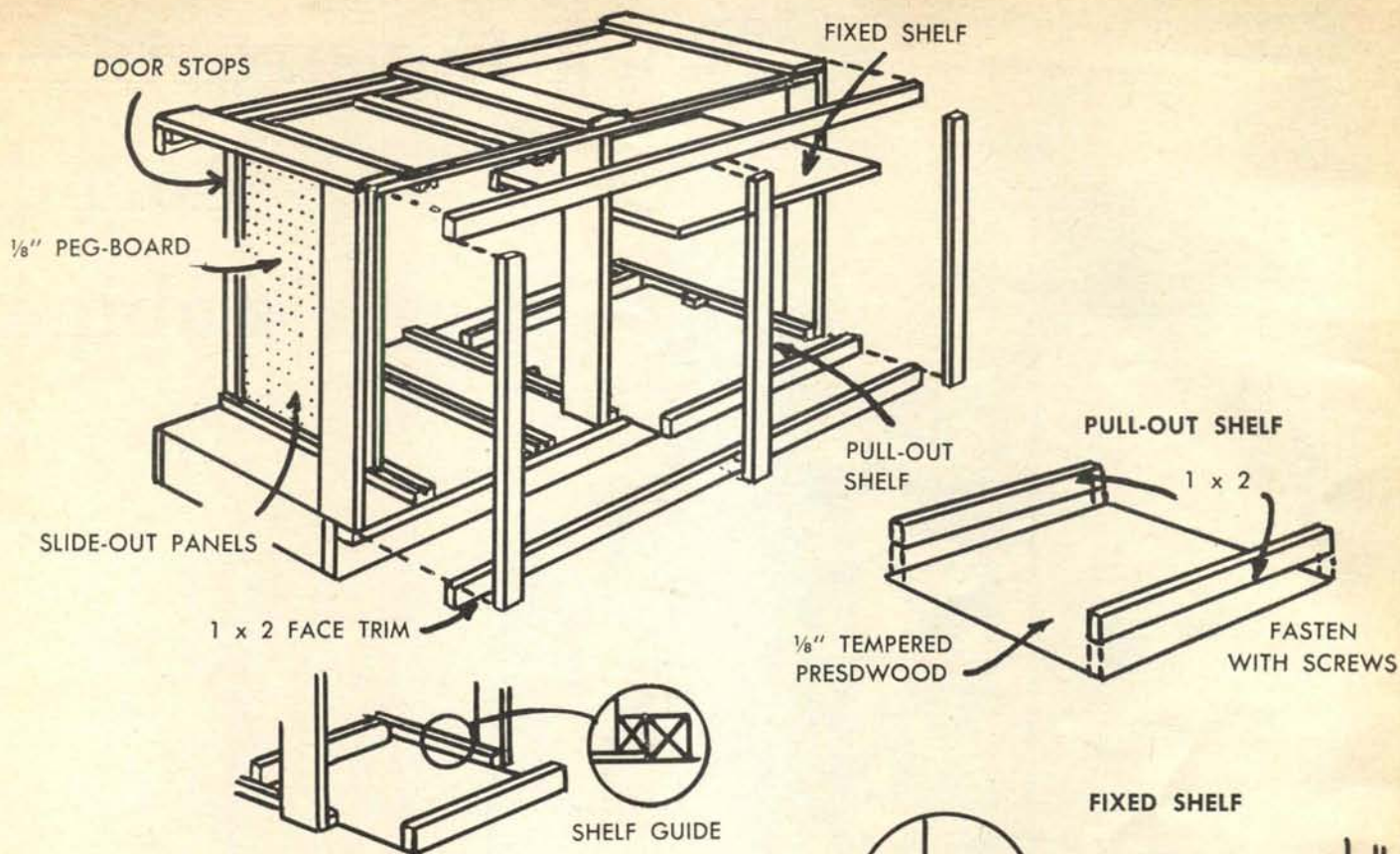
HORIZONTAL, slide-out shelves make even the back of the cabinet a practical place to store pots, pans and utensils that are used every day. Fixed shelf above holds dishpan, other large items.



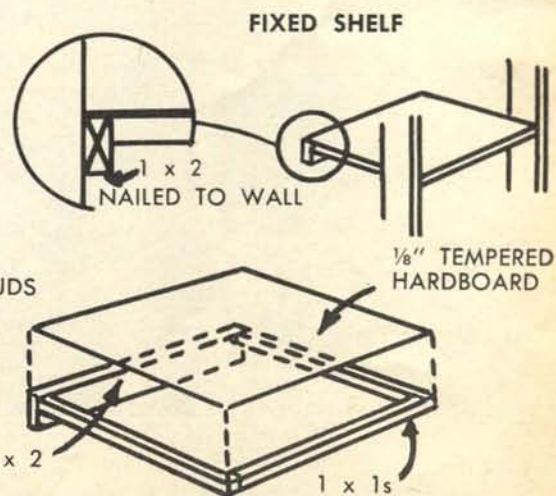
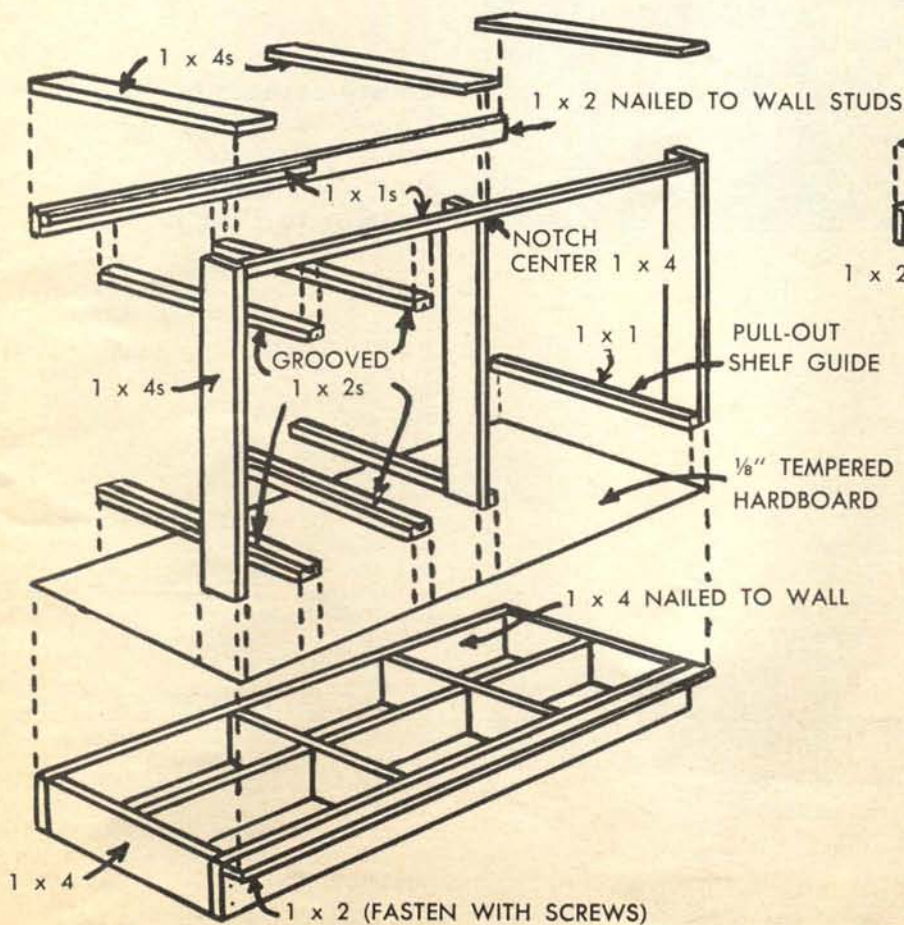
TOP VIEW OF SINK CORNER







#### FRAMEWORK



VERTICAL, slide-out "shelves" permit storage alongside sink trap, a space normally not very usable for this purpose.



# "Stack Construction"

## Corner Cabinet

JOHN F. CLARK



**Empty corners in your home going to waste when you need extra storage space? Corner cabinets are the answer to that problem.**

### Material List

1. 7 triangular shelves,  $25\frac{1}{2}'' \times 25\frac{1}{2}'' \times 33\frac{1}{2}''$ ,  $\frac{3}{4}''$  plywood
  2. 1 spacer,  $12\frac{3}{4}'' \times 25\frac{1}{2}''$ , 1" white pine
  3. 1 spacer,  $12\frac{3}{4}'' \times 24\frac{3}{4}''$ , 1" white pine
  4. 4 spacers,  $11\frac{3}{4}'' \times 25\frac{1}{2}''$ , 1" white pine
  5. 4 spacers,  $11\frac{3}{4}'' \times 24\frac{3}{4}''$ , 1" white pine
  6. 1 spacer,  $20\frac{1}{4}'' \times 25\frac{1}{2}''$ ,  $\frac{3}{4}''$  plywood
  7. 1 spacer,  $20\frac{1}{4}'' \times 24\frac{3}{4}''$ ,  $\frac{3}{4}''$  plywood
  8. 1 spacer,  $10\frac{3}{4}'' \times 25\frac{1}{2}''$ , 1" white pine
  9. 1 spacer,  $10\frac{3}{4}'' \times 24\frac{3}{4}''$ , 1" white pine
  10. 2 trim pieces,  $6'' \times 63\frac{1}{2}''$ , 1" white pine
  11. 1 trim piece,  $6'' \times 23\frac{1}{2}''$ , 1" white pine
  12. 1 trim piece,  $3'' \times 35\frac{1}{2}''$ , 1" white pine
  13. 3 trim pieces,  $3'' \times 18''$ , 1" white pine
  14. 1 trim piece,  $11\frac{1}{2}'' \times 35\frac{1}{2}''$ , 1" white pine
  15. 1 piece, 1" half-round molding, 37"
  16. 1 piece molding, 37" (to match existing)
  17. 1 piece cove molding, 37" (or match existing molding)
- 2 doors,  $\frac{3}{4}''$  plywood, cut to fit opening after cabinet has been assembled.

UNUSED CORNERS in dining, living and even in bedrooms can be utilized to full advantage with corner cabinets. Not only does a corner cabinet provide extra storage space, but it changes a blank corner to a beauty spot. Construction of the cabinet described in this article consists of a series of shelves and spacers that are stacked, one on the other, and nailed together. A scalloped facing then finishes the assembly.

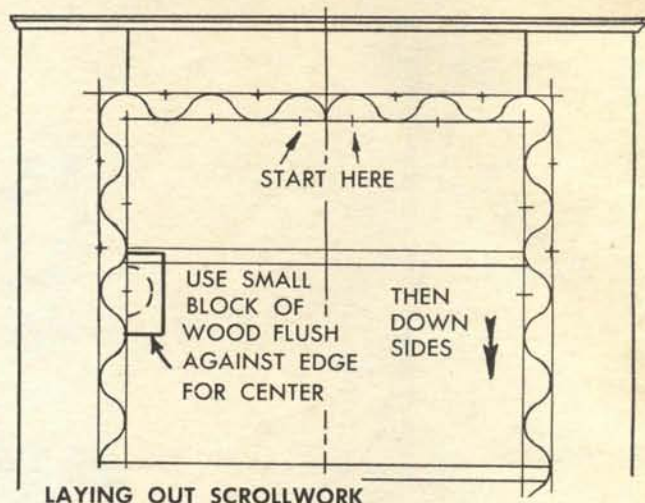
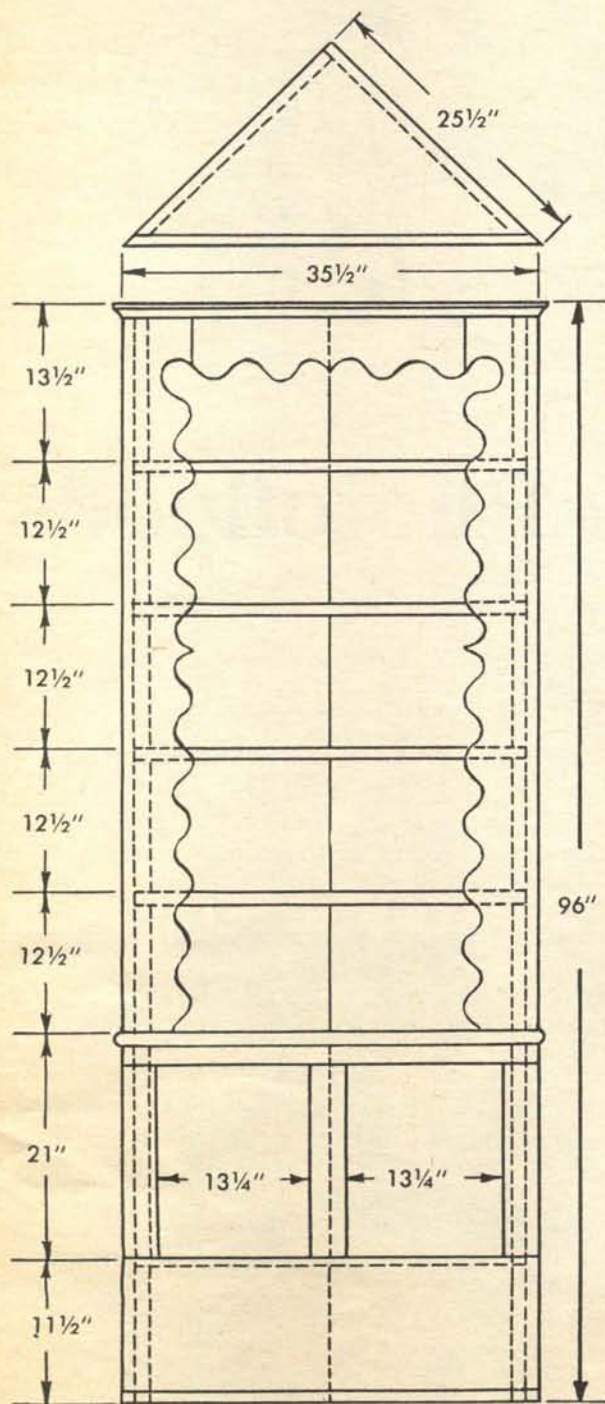
First step in the construction is to remove the baseboard and quarter-round molding from the corner where the cabinet is to be located. Next, measure out  $25\frac{1}{2}$  in. from the corner on each wall. Drop a plumb line from ceiling to floor and mark a line on the wall. Use a plumb line or level, rather than measuring on the wall against the floor and ceiling, as it is extremely unlikely that a particular corner will be plumb and true. Cut all shelves and spacers and sand them before assembly. Nail the first



two spacers in place, then nail a shelf to them. Repeat this operation to the ceiling, using wedges, if necessary, to keep the front edges aligned with the plumb line. Bottom trim now is nailed in place permanently. Nail 10 and 11 in place temporarily to draw the scrollwork. If circles do not match exactly make the circles slightly larger or smaller, or fill in small errors freehand. Mark the trim

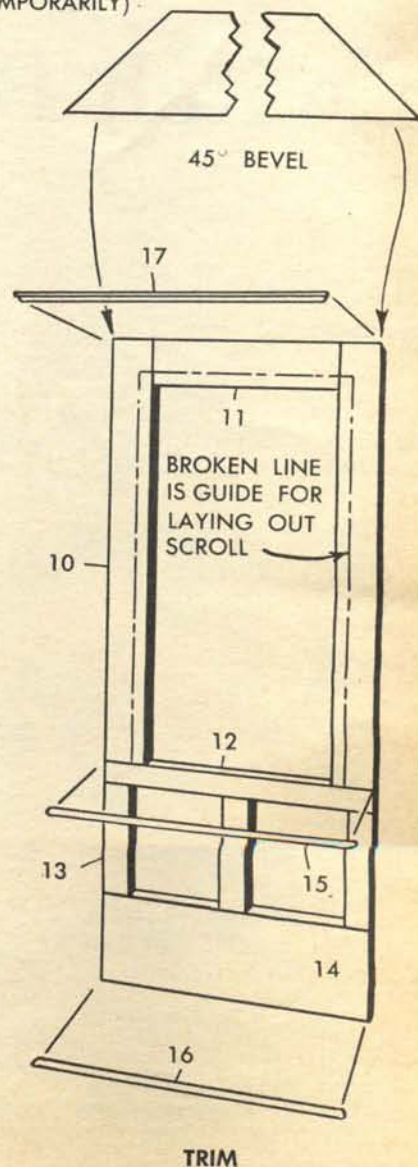
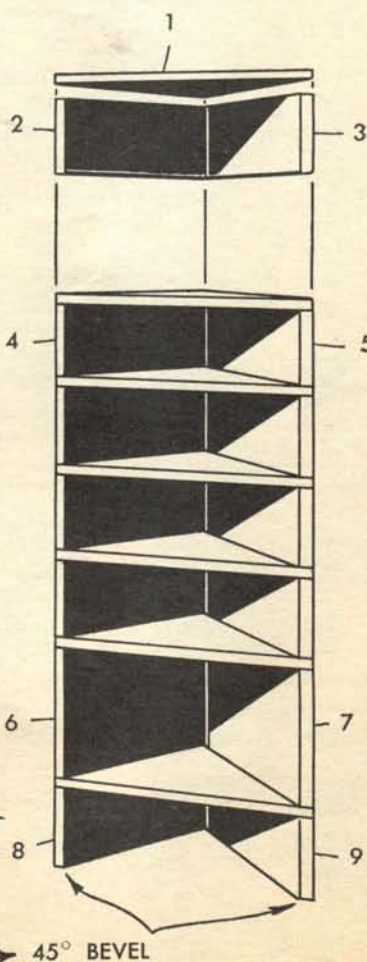
before removing, so it can be replaced in the same position. Cut the scrolls and install them. Make the doors, but do not install until finish has been applied to them and to cab-

inet. Cut and replace baseboard and molding. Part 16 goes on last. Finally, install hardware and doors. Shelf edges can be trimmed with tape veneer or thin stock.  $\Delta \Delta$



(TRIM IS NAILED IN PLACE TEMPORARILY)

#### "STACKED" ASSEMBLY







# Switch Box Saves Photofloods

LONGER LIFE for photoflood lamps, less discomfort for human subjects and a minimum of damage to easily melted or heat-damaged objects are the main advantages provided by this switch box, but a photo hobbyist or serious amateur will find several more. From one to four lamps—depending on the size of the switch

box—can be turned on and off from the box, eliminating the need for walking to a wall switch or getting hands close to an overheated reflector. A single cord leads from the switch box to a receptacle, so that any tangle of cords is kept to a minimum, being only between the lights and the switch box, rather than com-

pletely across a room. Because extension cords on the lamps need reach only to the switch box, they can be shorter than if they had to reach a wall receptacle.

One switch on the box turns the current on and off, the other two are 3-way switches that change the current to the lamps from series to

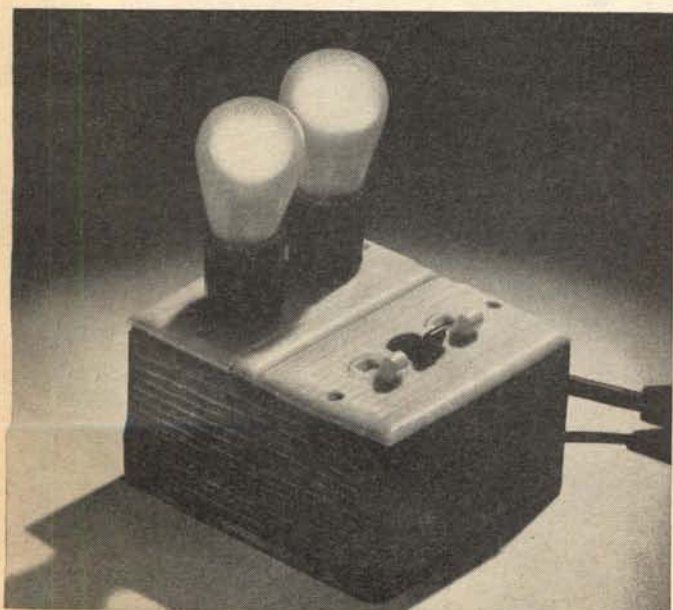


FIG. 1. Switch on far end of plate is off-on switch for the box, other two control current to the two 10-watt lamps used for testing completed switch box. Switches here are in series position, lights at one-half brilliance.

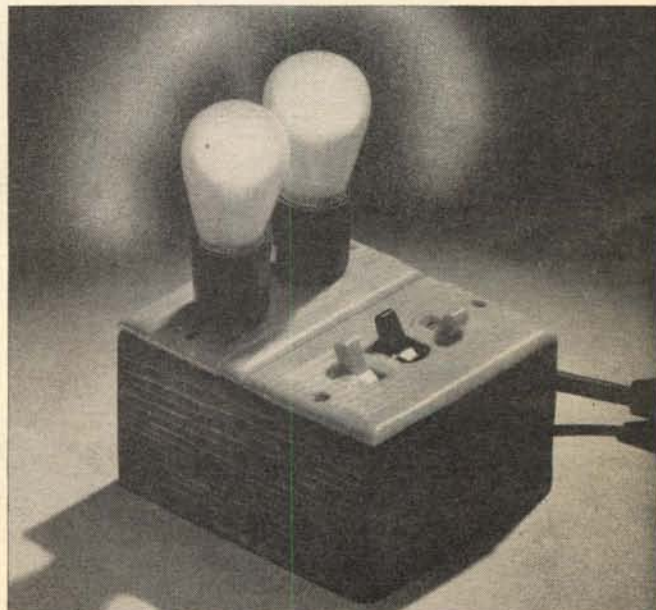


FIG. 2. Here two lamp switches are snapped in opposite direction from positions in Fig. 1 to put lamps in parallel circuit for full brilliance. Dark switch is at center for uniform appearance, could be at end.



parallel. A switch for each lamp permits using either, or both lamps full-bright on parallel or dim on series circuits, as shown in Figs. 1, 2, 6 and 7. With the lights on the dim position, poses can be arranged and lights set up with a minimum of discomfort to model and photographer. A light reading with a meter can be made with the lights turned on full bright for just a few moments, then the lights can be switched back to dim while the camera settings are made. A few seconds more of the bright lights are required for snapping the shot, then the lights can be returned to dim or shut off completely. All lamps plugged into one switch box should be of the same size, that is both should be No. 2 photoflood, 2,500-watt lamps, etc.

A few scraps of 1-in. stock and some 3/16-in. material were used for the original switch box, Fig. 8. If you have 1/4-in. plywood or hardboard it can be used for the end pieces, the rabbets on the ends of the side members being cut 1/16 in. deeper to accept the thicker material. Glue and finishing nails are used in the assembly of the box. It can be finished with stain or paint to suit. Flat black on the box, contrasting with the ivory of the switch and receptacle plates, presents an attractive professional appearance.

Switches and receptacles, and plates for both, Fig. 3, can be purchased at most hardware stores and all electrical-supply houses. A number of manufacturers make 3-way switches, but not all are wired the same internally. The wiring diagrams, Figs. 4 and 5, are for Despard units, which were used on the original switch box. The switches and receptacles shown in Fig. 3, Despard units, are individual units clipped in a metal frame. Some makes of receptacles are coupled in pairs, and could not be used as indicated in the wiring diagrams. Follow the diagrams accurately; any changes will cause blown fuses.

Single-strand 18-ga. wire with a plastic covering was used to wire the switches and receptacles, Fig. 3. This size wire has ample capacity for the current, and because of its stiffness, will stay in any shape into which it is bent, assuring that it will not move around and cause a short circuit inside the assembled switch box while it is being used.

While a 2-receptacle box, shown in all Figs. but Fig. 5, usually will not present a problem in overloading a circuit when the lamps are on full bright, a 4-receptacle box with four lamps at full brilliance will blow a fuse if used for very long. With a 4-receptacle box a fuse or circuit breaker should be wired into the circuit between the box wiring and the off-on switch. A temporary overload then will break the circuit at the box where it quickly can be repaired or corrected, rather than requiring a trip to the fuse box in the basement

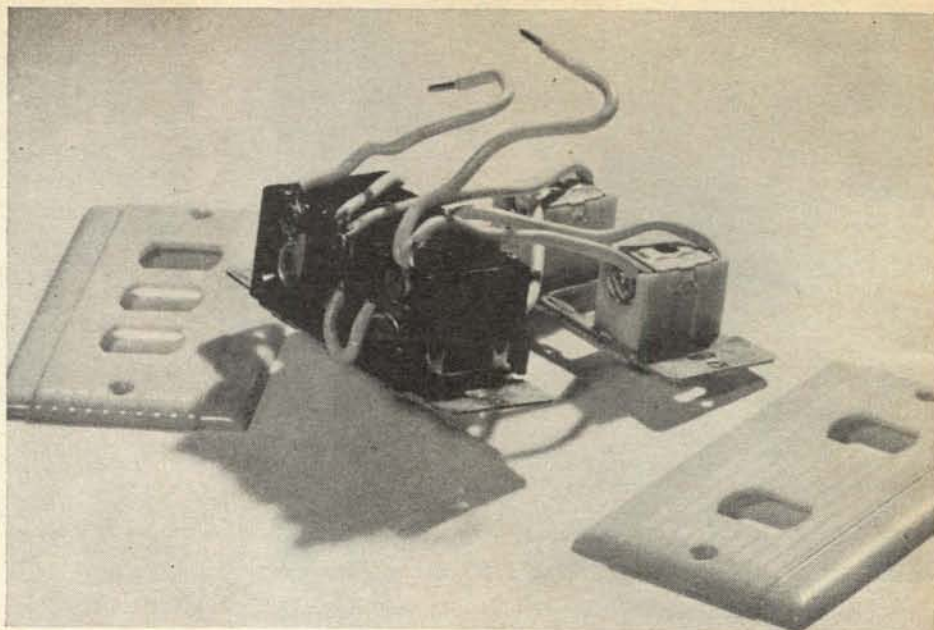


FIG. 3. Assembled, wired switches and receptacles before installing in switch box. All units are upside down, in same relative positions as wiring diagrams shown below.

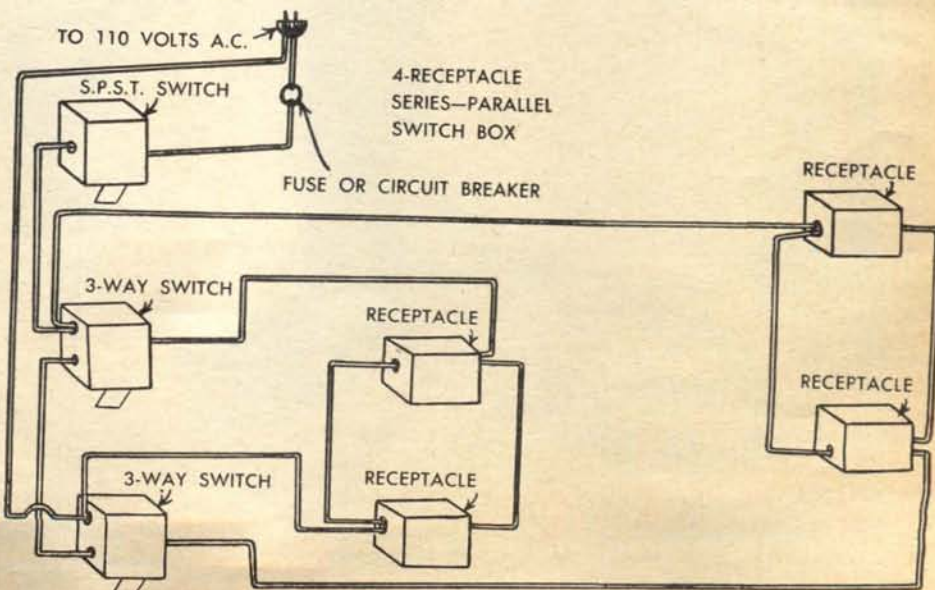
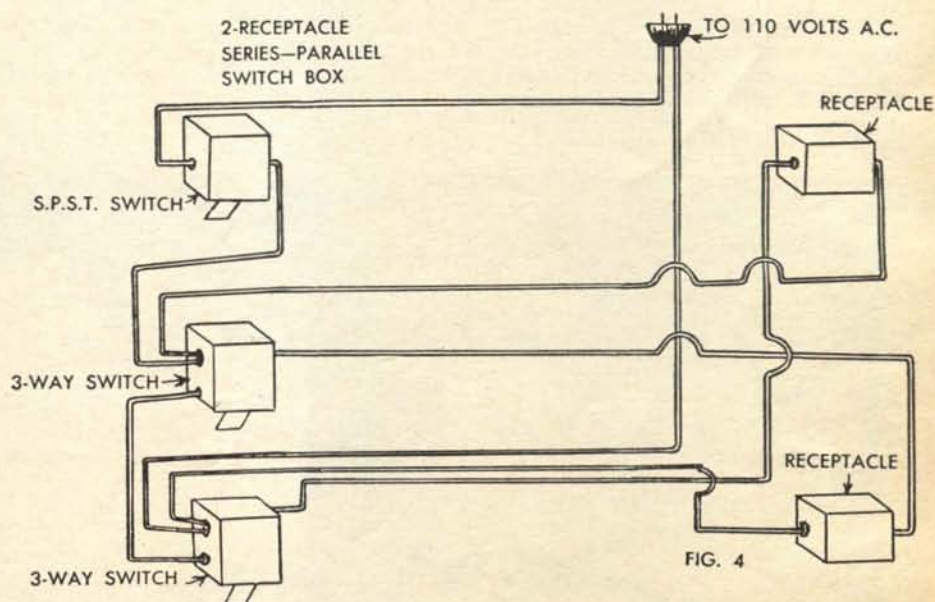


FIG. 5





FIG. 6. Nearest switch flipped toward receptacles will light diagonally opposite lamp on full brightness when only single lamp is to be used for making photo setup. Other lamp remains in circuit, but does not light unless other switch is thrown.



FIG. 7. Opposite setup from situation illustrated in Fig. 6. Such an arrangement would be useful when checking for shadows thrown by a light from either side of a subject, if the subject were to be posed with a shadow on one side for special effect.

or utility room. Four lamps should be used on full brightness for only 10 or 15 sec. before they are switched back to dim, to prevent overloading a circuit. If there are sufficient outlets in your studio, or the room in

which photographs are to be taken, it is better to use two 2-receptacle boxes plugged into different circuits in the house, than a single 4-receptacle switch box.

As shown in Fig. 8, a short wire

with a male plug is threaded through a hole in the box to permit connecting it to extension cords. This eliminates the need for a long cord on the box itself, which helps to keep this unit extremely compact.  $\Delta \Delta$

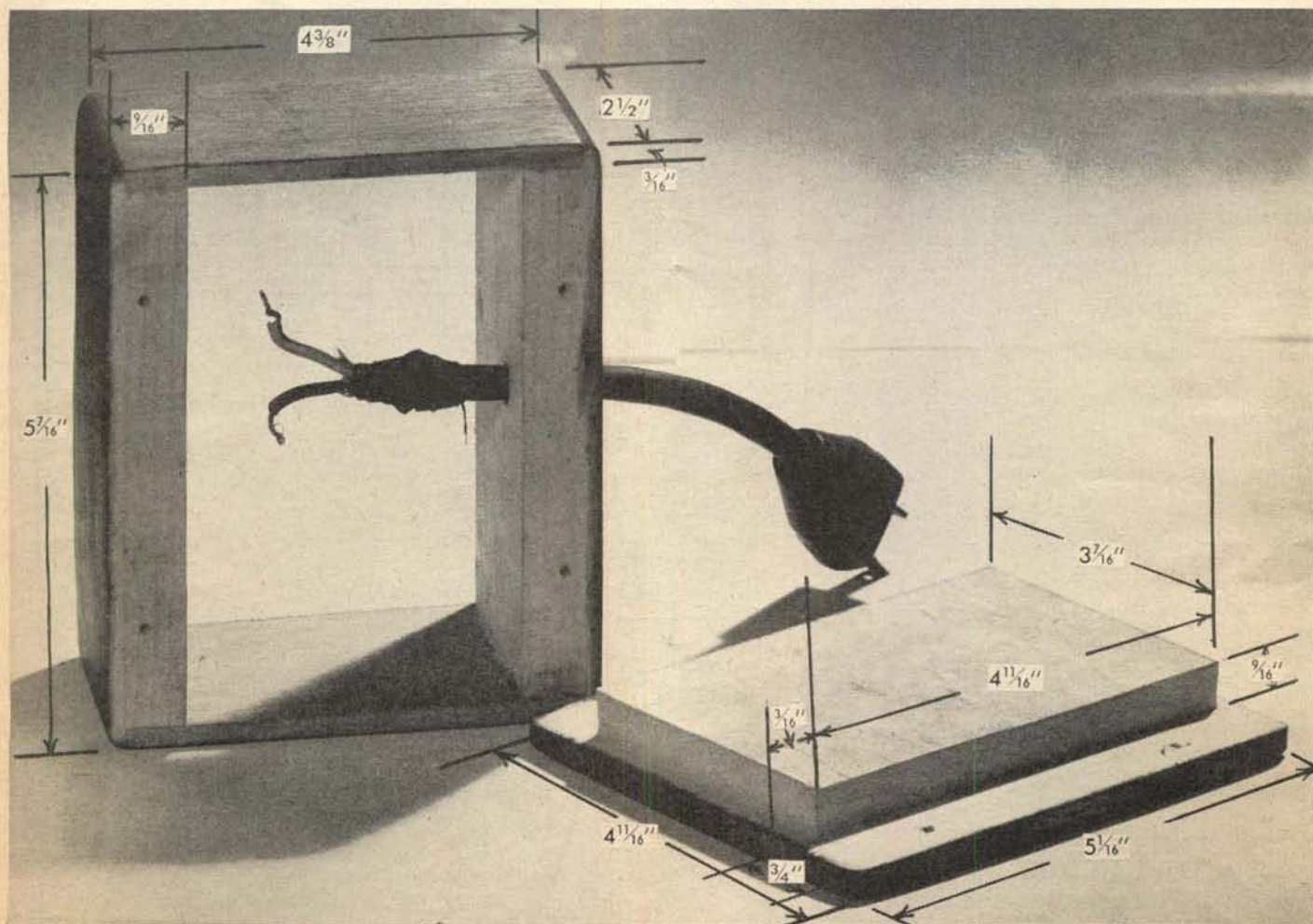


FIG. 8. Dimensions of switch box are for one with two receptacle outlets. Box for four receptacles would have to be one-third larger inside to accommodate the two added receptacles and additional wiring. Two 2-receptacle units would be best, as described in article, to minimize chances of overloading a single circuit, permit using two circuits from home fuse box.





# On-A-Door Magazine Rack

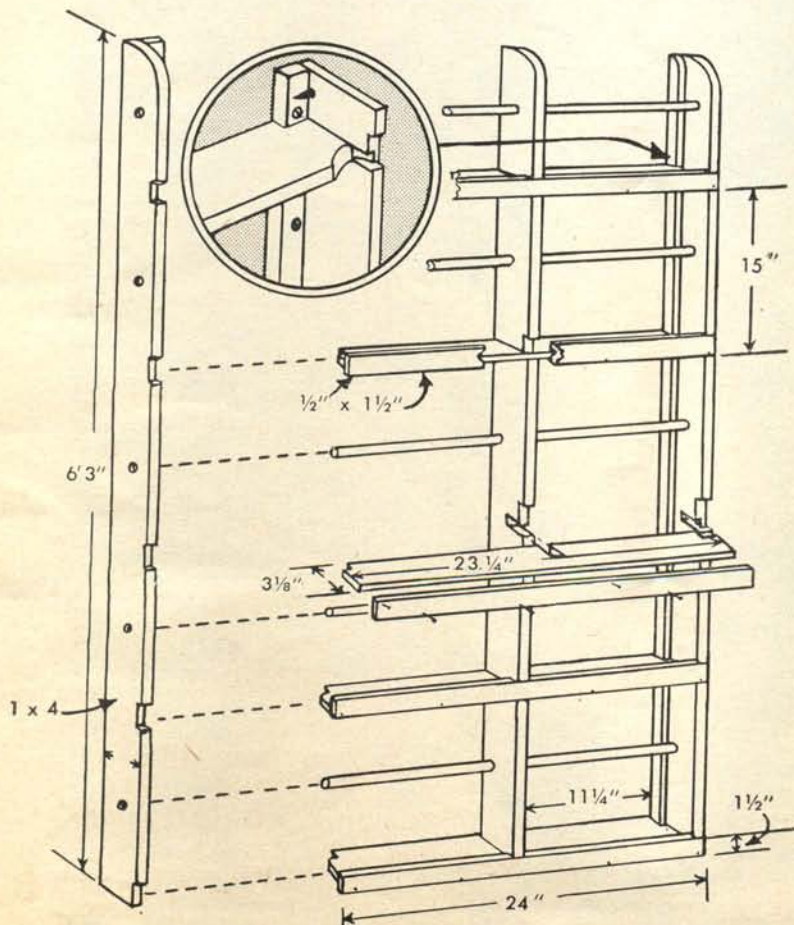
DONALD CREPEAU

STORAGE SPACE in a small home or apartment is a constant problem, and even current magazines must have a place of their own. Here is an ideal solution for magazine storage; a rack attached to the inside of a closet door. Your favorite publications are kept handy, yet are out of sight when the closet door is closed. Either solid stock or plywood can be used for the rack, the main consideration being to keep the assembly as light as possible to reduce the load on the door hinges. If the door has only two hinges, a third should be installed near the midpoint of the door and frame. Also, before installing the rack, make sure that all the screws in the hinges are tight. Where necessary, remove the screws, fill the holes with wood putty and re-install. When the putty has set well, then attach the magazine rack. Hollow-core doors will require the use of screw anchors to attach the rack solidly.

The following material will be required for construction:

- 2 sides,  $\frac{1}{2} \times 4 \times 75$  in.
- 1 center strip,  $\frac{1}{2} \times 4 \times 74\frac{1}{2}$  in.
- 5 shelves,  $\frac{3}{4} \times 3\frac{1}{2} \times 23\frac{1}{4}$  in.
- 5 facing strips,  $\frac{1}{2} \times 1\frac{1}{2} \times 24$  in.
- 5 dowels,  $\frac{3}{4} \times 24$  in.
- 2 cleats,  $\frac{3}{4} \times \frac{3}{4} \times 75$  in.

Just a slight repositioning of the rack members would make it suitable for holding record albums, if that is your storage problem.  $\Delta \Delta$



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# SPACE-AGE TOY

WARNER BENSON







FIRST STEP in assembling the model missile is to lay out the parts on the table, and check against the instructions. Construction is simple, parts are few, only glue and paint required. Lamp cord is needed for firing.



FINS ARE CEMENTED to rocket body, as is launching lug and long rubber band that acts as shock absorber for ejected parachute. Launching stand is assembled, deflection plate nailed to it, parachute tied to rubber band.

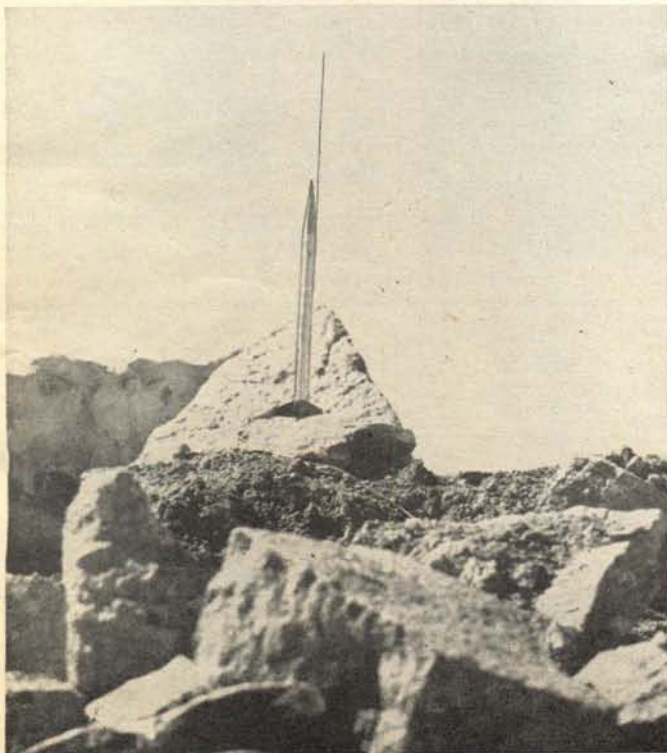
CHILDREN'S TOYS reflect the age in which they live. Not too many years ago youngsters built model airplanes to emulate the daring men that flew in the skies overhead. Today we are in the age of missiles, and man is reaching into space with fiery projectiles. To keep pace, toys must reach the sky, at least, and be propelled by rocket fuel. This can mean trouble if youngsters make home-made rockets and try to power them with concoctions of gunpowder and other explosives. Even adults do not have the scientific know-how to safely handle such dangerous toys. But now there is an answer. A safe one.

The toy is called a Rock-A-Chute, and it's a scale-model of the type of missile used to explore space. It is propelled by a rocket motor of solid fuel and is so designed that at the top of its trajectory it releases its nose cone and ejects a parachute that drops the unit safely back to earth. The nose cone is soft rubber, for safety in handling, and the solid-fuel engine cannot be fired except by a 6- or 12-volt battery.

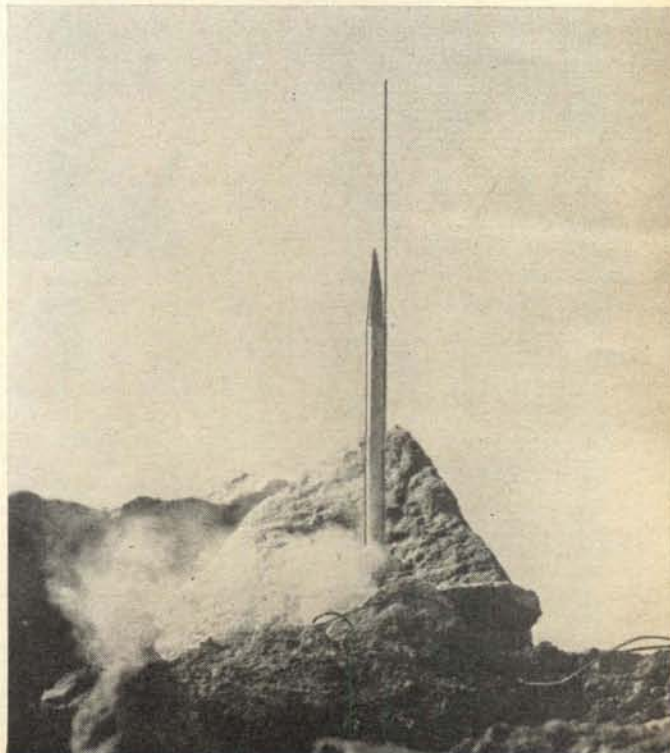
To be absolutely sure of this space-age toy, a kit was obtained, a 13-year-old boy assembled it and the completed rocket was fired under adult supervision. An automobile bat-

tery was used for the firing. The car was driven onto a large, open field leads were run from the battery and the rocket was fired. There was no flame, no problem, no worrisome incidents. Dad had as much fun as the youngster.

The Arcon Rock-A-Chute kit consists of only a few parts, and no trouble was encountered by the youngster in assembling the model rocket. All stress points at the fins and along the launching lug were given double coats of fast-drying cement. The launching stand, consisting of two strips of wood and a telescoping wire, went together easily. In the original



ROCKET STANDS POISED on barren rock, wires clipped to motor igniter and lead off to battery of car. Last-minute check is made to be sure launching area is cleared of all personnel. Launching will be authentic, and safe.



"FIVE, four, three, two, one, ZERO." Wires are touched to car battery, a puff of smoke flares from the tail of the missile and it trembles momentarily on the launcher, eager to leap up into the welcoming blue sky.



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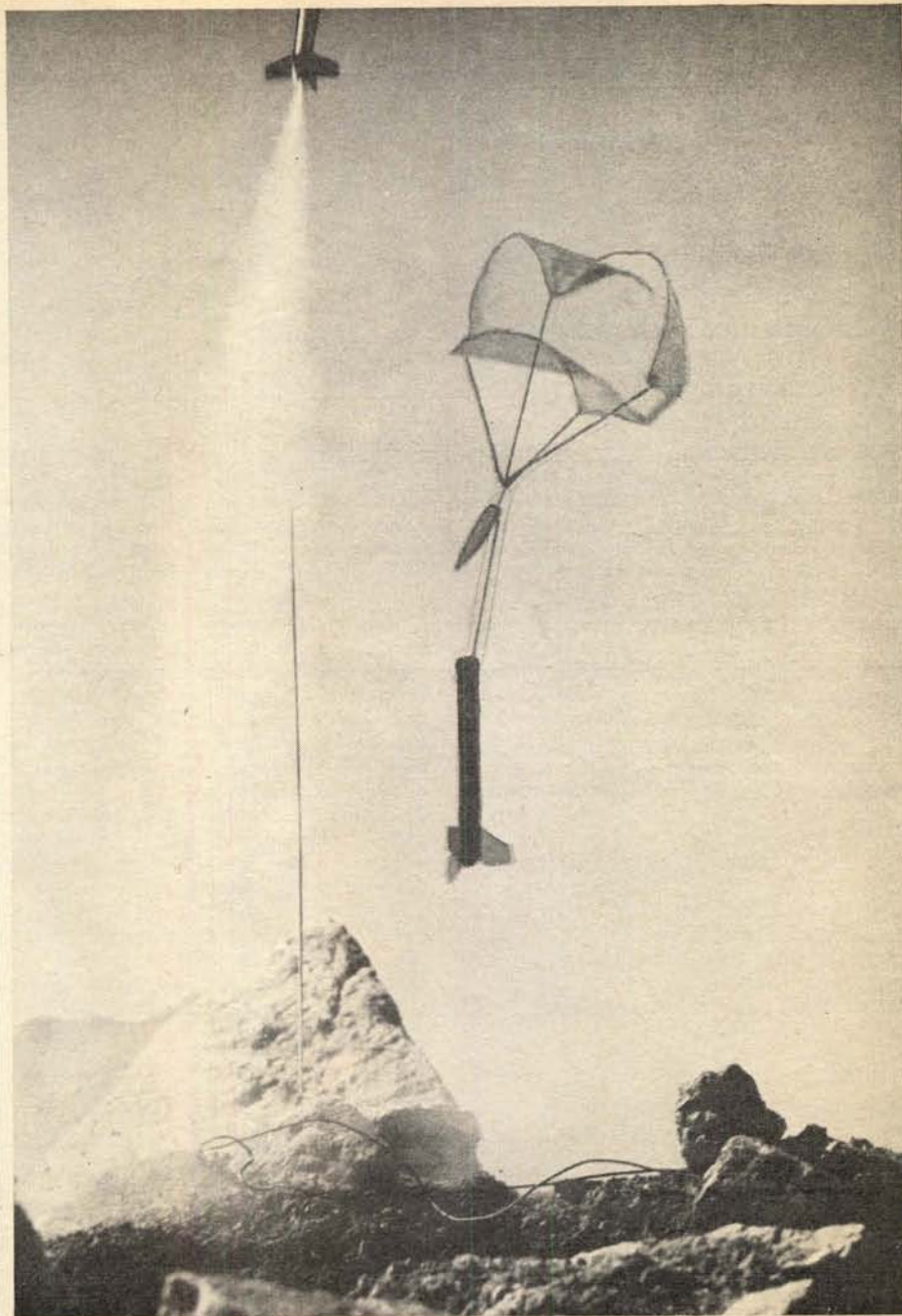
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SUDDENLY the missile hurtles upward, supported on a streaming column of smoke. Distinctly seen in this photograph is the short jet of power coming directly from the rocket engine in the climbing missile.

kit a plastic collar is cemented inside the rocket body, against which the solid-fuel engine is fitted. On the first firing, the motor ejected instead of the nose cone being fired free. Checking with the manufacturer we slipped a rubber band around the motor and it then stayed in the rocket body and fired off the nose cone so the parachute came free and lowered the unit to the earth. Rubber bands now are used instead of the plastic collar. A piece of lamp cord 15 ft. long, fitted with alligator clips, is required. The clips fit on the igniter wires that are taped to the end of the motor. The opposite ends of the wires are wrapped on nails. When everyone is clear of the rocket, a 5-sec. countdown is made, the nails

are touched to the battery terminals and the rocket puffs smoke for a fraction of a second, then leaps skyward. At the top of the flight the nose cone pops loose, the parachute ejects and the assembly floats to earth as shown in the photograph above.

If you can remember the thrill of the first flight of a model airplane you built, you will know what it is like to see the tiny, slender rocket rushing up on a column of smoke. Extra-power motors are available for the rocket, for high altitude flights. Two-stage boosters also are made, as are scale-model launching towers. If you want to introduce your son to the space age the safe way, and have fun yourself, this model rocket is the answer. △ △

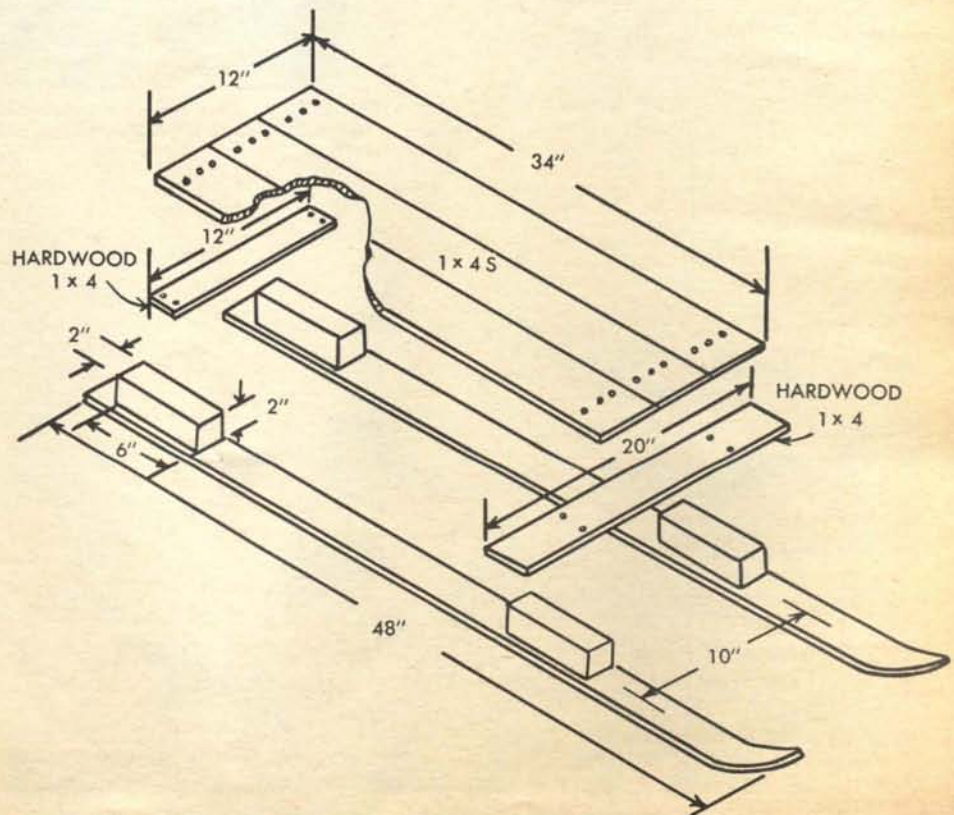


# SKI SLED For Winter Fun

JOHN F. DELIZ



BROKEN SKIS that can be shortened to 4 ft., or that perhaps will require being spliced, then shortened, make ideal runners for this ski sled. It can be run on soft snow or snow-covered grassy slopes where the steel runners of a conventional sled would cut through and quickly drag the sled to a stop. The wide wooden runners "float" this sled over the surface of the soft snow. Construction of the sled is simple. Spacer blocks between the ski runners and sled platform are 6-in. lengths of 2 x 2 and can be either hard or soft wood. The blocks are attached to the runners by driving wood screws 2 in. long up through the runners. The heads are countersunk. Position the blocks approximately 30 in. on center. Crosspieces joining the spacer blocks should be hardwood 1 x 4s. They are fastened to the blocks with wood screws. Waterproof glue can be used for additional strength. Three 34-in. lengths of 1 x 4 are screwed to the crosspieces to make the platform on which the youngster sits. Bore a hole near the forward edge of the center of the platform for a tow rope. Paint the skis and "undercarriage" of the sled a dark color, use clear varnish on the platform. △ △





# Table Top Hockey Game

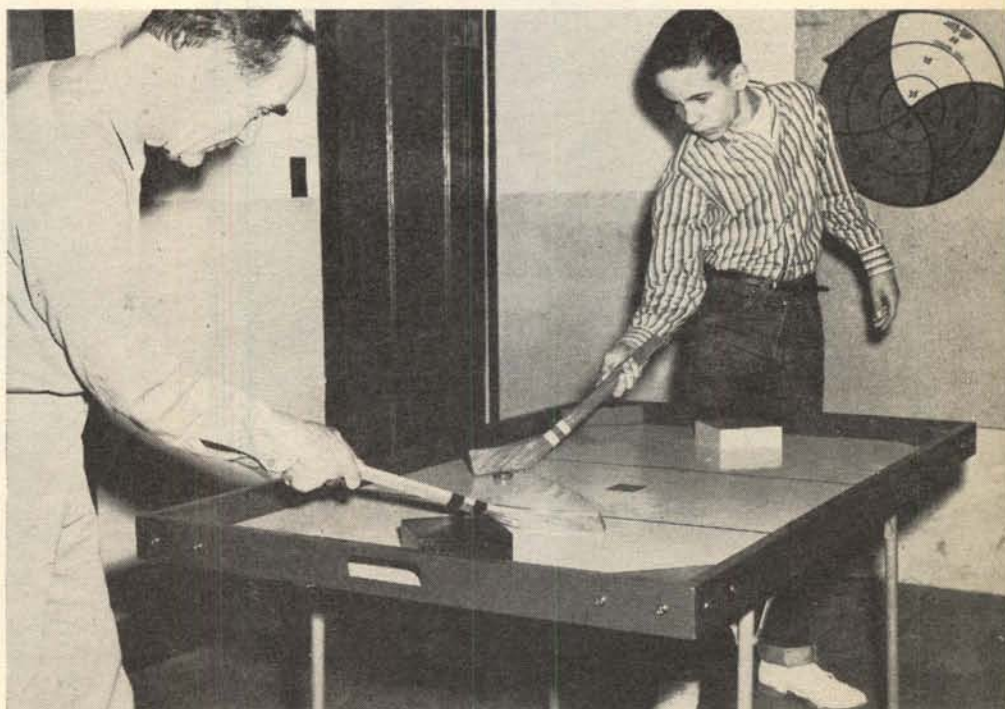
HAROLD JACKSON

You don't need ice or skates to play hockey on this rink you can make in your workshop.

## LIST OF MATERIAL

All dimensions in inches

1— $\frac{1}{4}$ x 32 x 52	Rink
2— $\frac{3}{4}$ x 2 $\frac{1}{2}$ x 53	Fence
2— $\frac{3}{4}$ x 2 $\frac{1}{2}$ x 33	Fence
2—1 $\frac{3}{4}$ x 5 x 5	Goal tender
2—1 $\frac{3}{4}$ x 5 x 5	Corner blocks
2— $\frac{3}{8}$ x 4 x 20	Sticks
1— $\frac{3}{8}$ x 1 $\frac{3}{8}$ round	Puck
12— $\frac{3}{4}$ x No. 6 F.H.	Screws
16—1 $\frac{1}{2}$ x No. 8 O.H.	Screws
16—Trim washers	



PLAYERS STAND at each end of the rink and shoot the puck back and forth across the "ice," each attempting to score a goal at the opposite end.

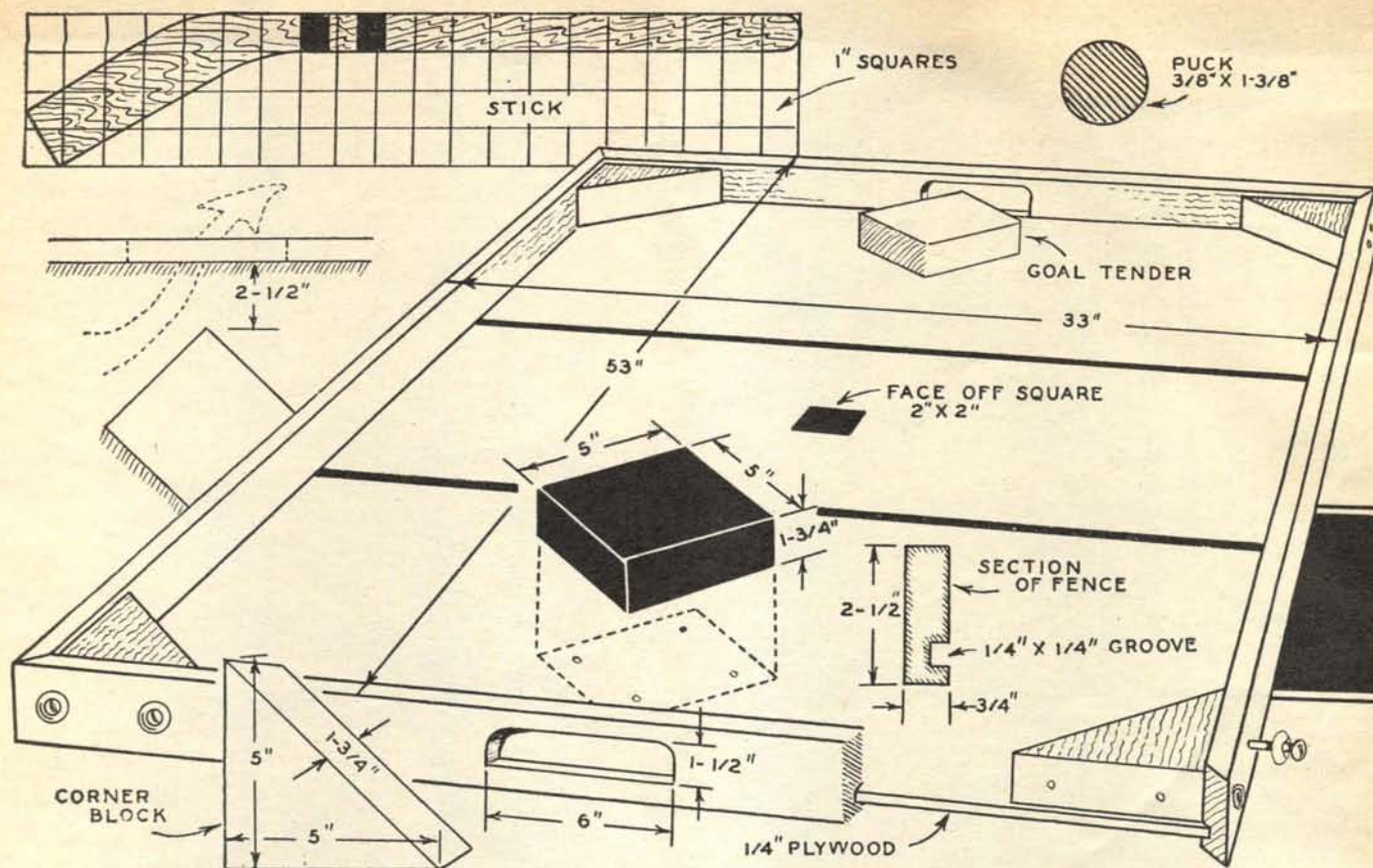


DETAIL OF CONSTRUCTION is shown here. Fence boards are attached by screws to the corner blocks. Fence boards are grooved to fit over the plywood.

FAST ACTION means ice hockey, and here we have that action scaled down to table-top size in this miniature rink. Just as in the real game, each player—two in this case—has a stick, and there is a disk-shaped puck that can be slammed the length of the "ice." With just one player on each side, the action is fast. Each player must be his own right and left wing, right and left defense and center. The only partner he has is his "goal tender in front of the net."

This hockey rink is made of  $\frac{1}{4}$ -in. plywood fenced in by a  $\frac{3}{4}$ -in. strip all the way around. The fence is grooved to fit over the edge of the plywood rink board. The corners of the fence strips are mitered to make a neat joint. The fence strips are attached to the corner blocks with two screws at each end. Each end fence has an opening located at the center. These are the "nets." The goal tenders are blocks of wood screwed to the "ice" directly in front of the nets. The blocks make a di-





rect shot into these nets almost impossible from any position in the field. The drawing gives dimensions of all parts and how they go together.

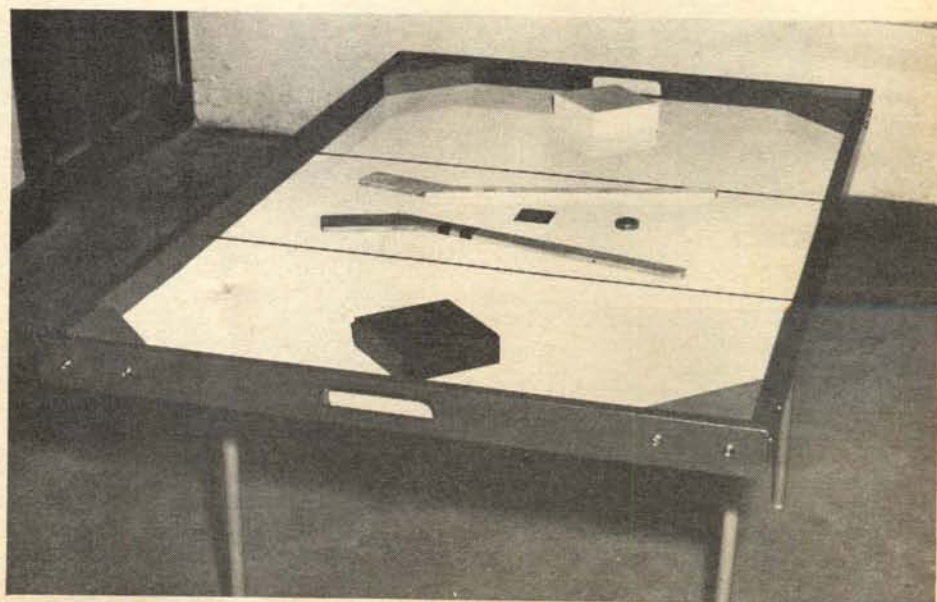
The rink surface is painted light blue to simulate ice. Enamel is used to give a hard, smooth surface. The field is divided off into three equal areas by stripes  $\frac{3}{8}$  in. wide. These are called the defense zone, center zone and forward zone. A two-inch face-off square is painted in the center of the board. Black enamel is used for these markings. Fence is green. Corner blocks are painted bright red.

The hockey sticks are cut from  $\frac{3}{8}$ -in. hardwood. Use the squared sketch to make a pattern for these. They are well sanded and all edges are rounded off slightly. These are varnished and striped to match the goal tender blocks, one yellow and one black. The puck is also made of hardwood  $\frac{3}{8}$ -in. thick and  $1\frac{3}{8}$  in. in diameter and is painted black.

The object is to shoot the puck off the board through the slot in the fence at the opponent's end of the rink. All defense action must be carried out in each player's defense zone. The puck must not be struck or batted. It is moved by quick shoves with the stick. Knocking the puck off the rink over the fence by rough use of the stick or conducting defense over the line out of the defense area constitutes a pen-

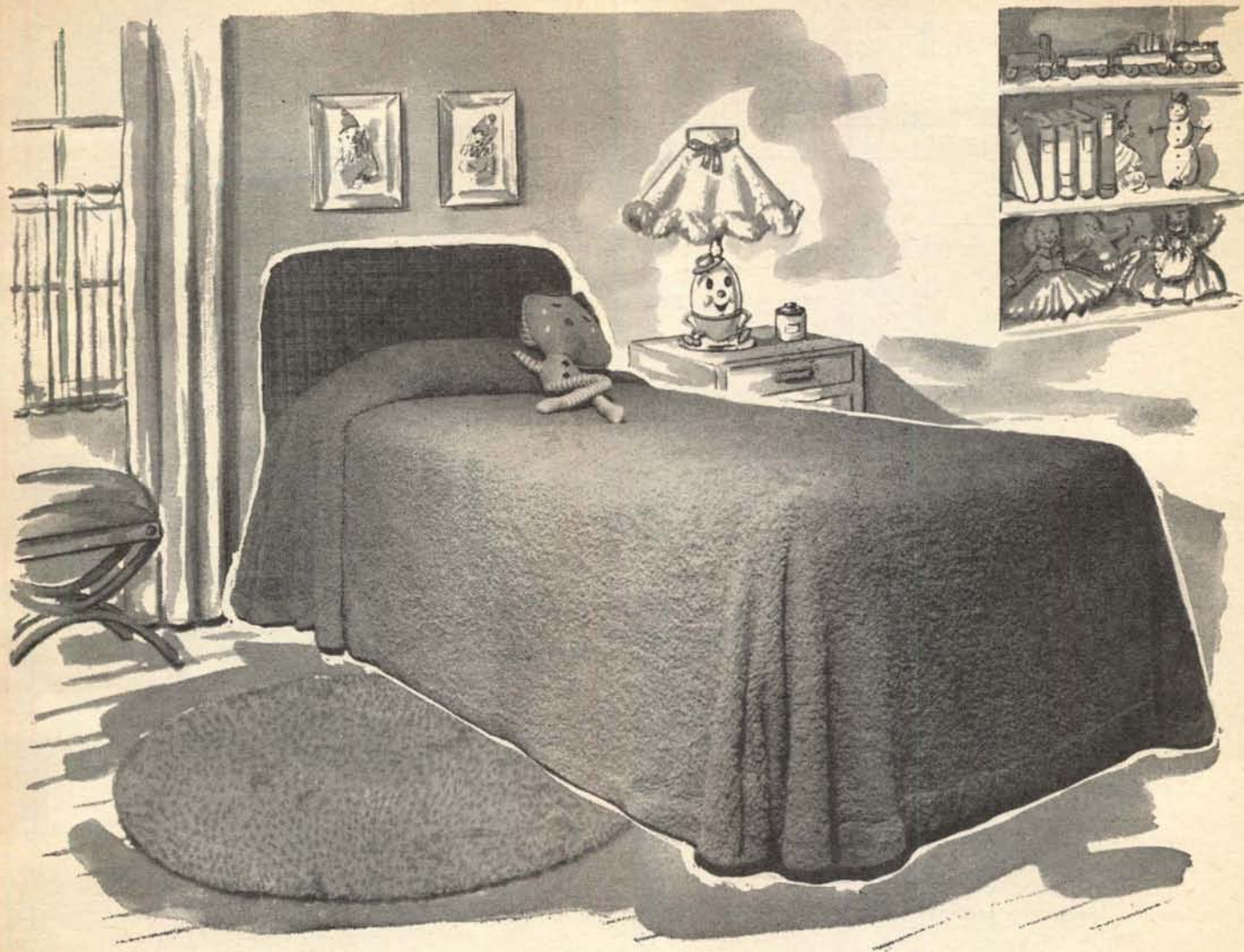
alty. This permits one undefended shot from the face off square by the opponent. Each successful shot which sends the puck out through the opening at the opponent's end of the rink counts for one. Players take turns shooting from the face-off square

after each goal. A score of twenty completes one period. This hockey rink is set directly on top of any card table. It is easily stored against the wall resting on one end. Keep the surface of the rink well waxed so the puck will glide easily.  $\Delta \Delta$



LAYOUT OF HOCKEY RINK showing simple design and position of all parts. Corner blocks and goal tenders are attached by screws from the underside. Rink, which weighs about 18 pounds, can be placed on an ordinary card table.





## New Beds For Old

LEE WALLEK

NEW BEDS needed for growing youngsters? How about those beds stored in the attic or basement, the kind with metal spindles at head and foot? They make a room look like a dormitory or hospital ward in their present form, but not when given a simple conversion job to bring them up to date. Although different bedsteads will vary in design, the general modifications shown can be used for any style of bed, whether wood or metal.

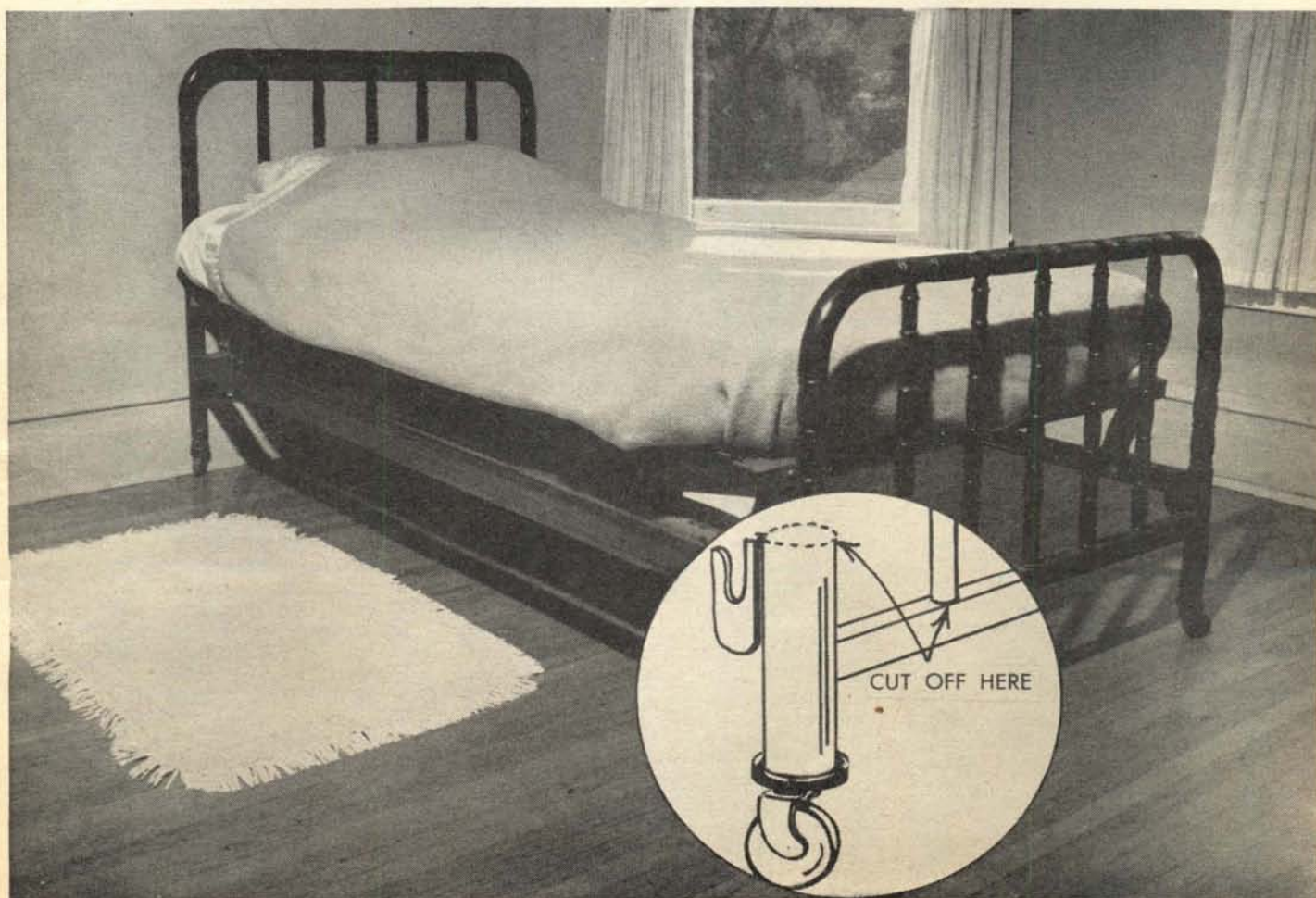
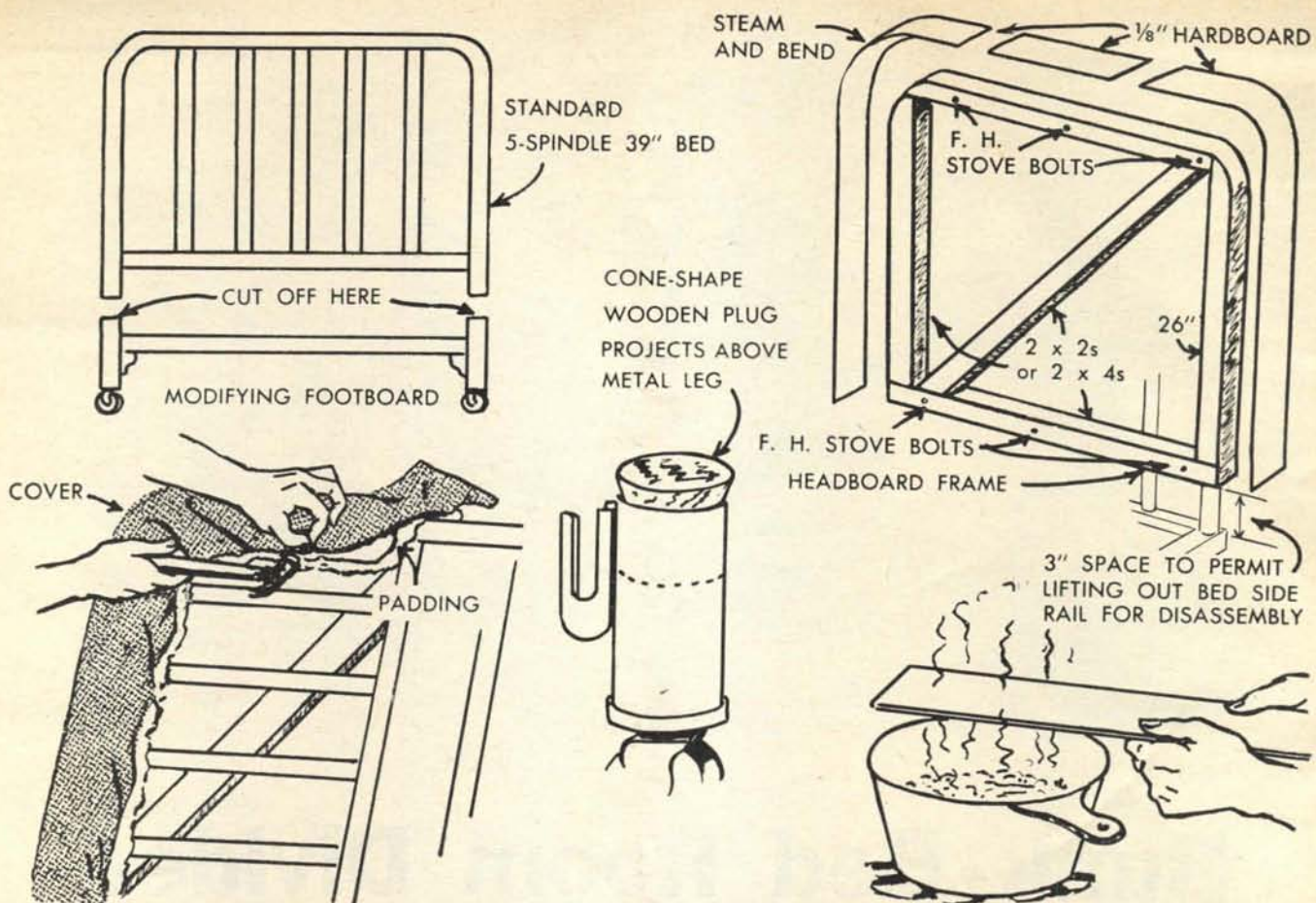
Begin by sawing off the spindles of the footboard flush with the crossmember of the bedframe. Use a hacksaw for metal, a crosscut saw for wood. File the cut surfaces smooth and, if it is a metal bed, plug the holes in the end spindles with a tapered dowel that will project above the metal. Round the end of the dowel slightly. If the bedstead is wooden, some reinforcement may be required between the legs and the crossmember. Assemble the frame for the headboard from 2 x 2s, or 2 x 4s, depending on the width of the bedstead members. It is bolted to the headboard. The face of the headboard frame now is covered with plywood or hardboard. Its thickness is not critical; any scrap piece large enough can be used. The edges of the frame are covered with

1/8-in. hardboard. Cut the edge strips 4 in. wide and 1 ft. longer than the side pieces of the frame. The hardboard used should have only one side smooth. The last foot of each side piece now is steamed thoroughly and the two pieces are screwed to the headboard frame. The holes are drilled before the steaming. Batt quilting now is stapled to the face of the headboard and covered with cloth, plastic or leatherette that is wrapped over the edge of the headboard and stapled or tacked inside the frame as indicated in the sketch.

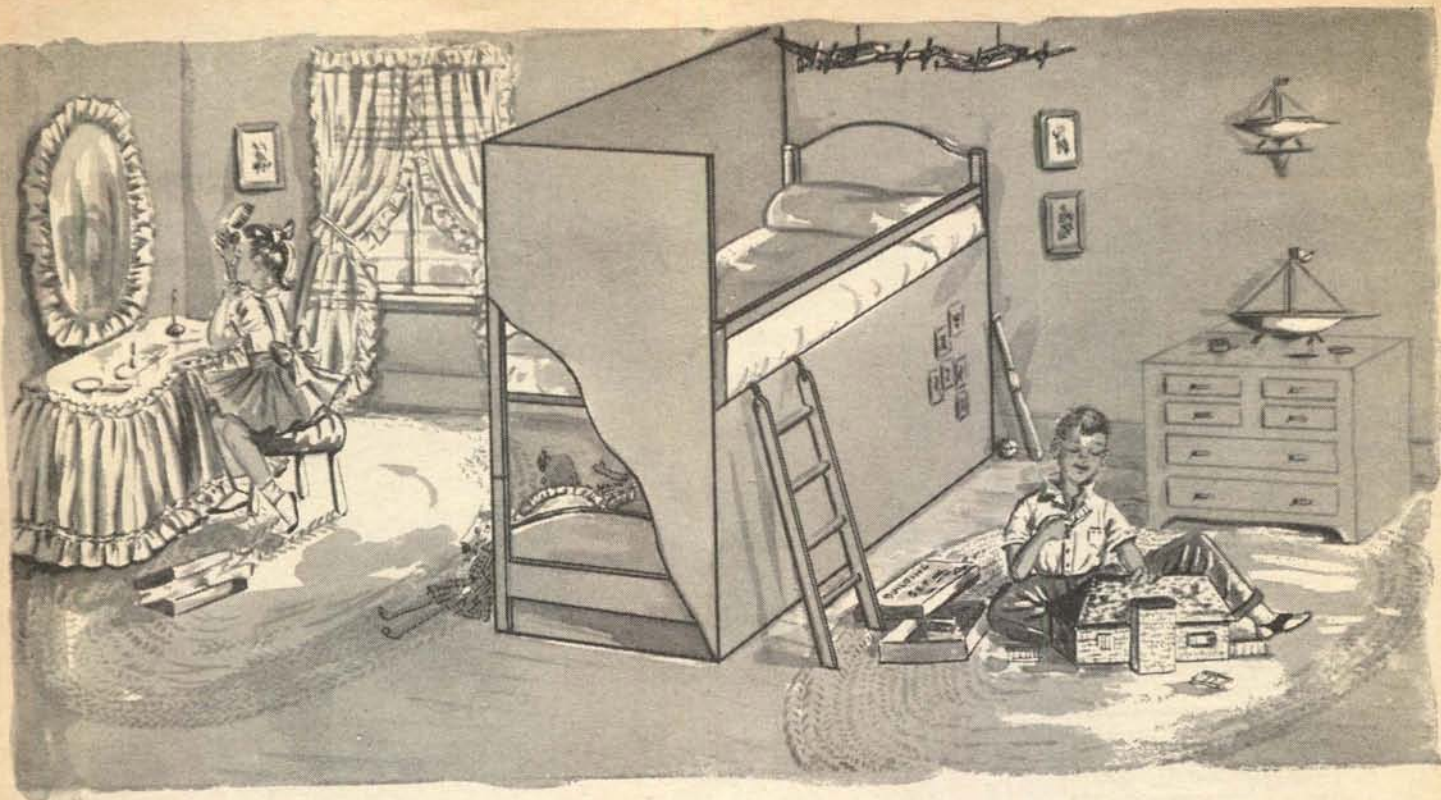
If the bed still seems too high, especially for a child, the legs can be shortened and the casters reinstalled. If the youngster is just ready to move from a crib to a youth bed, you can save yourself the price of the piece of furniture by modifying an old bed as described and using bedrails, available from mail-order houses for about three dollars. In a short time the rails can be removed and the youngster can use the bed right on through high school.

While the bed shown in the photos and drawings is a standard 39-in. single bed, a double bed also can be modified in the same manner. △ △









# Bunk-Bed Room Divider

By Warner Benson

ARE YOU pinched for space in a two-bedroom house with a growing young son and daughter? Perhaps this bunk-bed room divider is the answer to your problem. It will permit making two rooms of one so that your son's model airplanes will not interfere with sister's dolls and dollhouse for a year or two until you have the time and money to add another room to your present house, or can buy a larger home.

The beds are positioned one above the other, and with their ends against one wall of the room. Windows may present a problem, but the beds should be located to divide the room into two equal halves. Sheets of  $\frac{1}{8}$ -in. hardboard or  $\frac{1}{4}$ -in. plywood then are screwed to the beds so that the open ends are closed from floor to ceiling. A panel then is screwed to one side of the upper bed and to the opposite side of the lower bed. Thus, the upper bunk has one side of the room and the lower bunk the other. Paneling on the upper bunk should extend clear to the ceiling so that brother—he usually wants or gets the upper bunk—does not toss odds and ends onto his sister's side of the room. For the same reason it is suggested that paneling be fastened to the un-

derside of the top bunk. Usually this requires that holes be drilled in the bed angles and nuts and bolts used to attach the paneling.

To keep the bunks from shifting, fasten the lower bed to the floor. Short lengths of steel angle can be used for this. Drill a hole in each flange to accept a heavy wood screw. One screw is driven into the floor, the other into each bed leg. Lengths of  $1 \times 2$  are fastened to the ceiling to permit fastening the upper edge of the paneling. If you are lucky you may align with the ceiling beams, but most likely you will have to use screw anchors of some sort. There are fasteners for plasterboard that will permit strong attachment to the ceiling if your home is of dry wall construction. Use as few fasteners as possible, because all holes will someday have to be filled and finished when beds are disassembled.

If the room is to be repainted, it is suggested that this be done before installing the bunk-bed divider. Painting after the bunks are in place will cause a paint line to show when the beds are taken down. If a new floor covering is to be laid, also do this before the divider is installed. Fitting floor covering around the installed beds will result in an uncovered area when the beds are removed. As for decorating, the plywood or hardboard paneling can be

painted to match the walls of the room. No extra preparation is required. The two sides of the room can be painted different colors to more nearly match the varying temperament of a boy and girl, but this will present a problem of redecoration when the beds are removed.

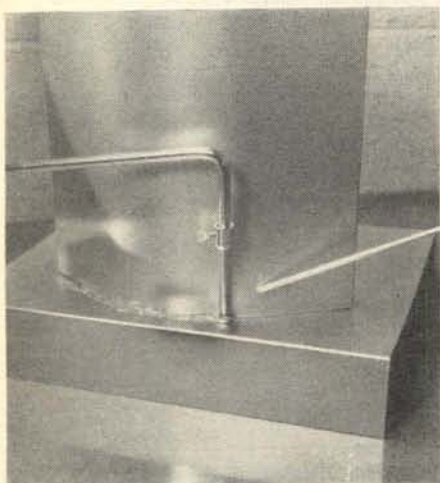
What can be done is to paint or paper only the paneling on the beds. This will make the two sides of the room different, yet when the beds are disassembled, the unlike decorating also will be removed.

Should there be a ventilation problem with the upper bunk paneling being solid all the way to the ceiling, the upper portion can be fitted with wooden louvers, or vent-type aluminum or bronze screening. This will allow air circulation, but still eliminate the problem of flying objects. The screening, as well as wooden louvers, can be painted to match the walls or paneling.

When a room is divided this way there will be occasional arguments about the area at the end of the beds. The end paneling can be divided in half and painted different colors, or a heavy line can be painted down the center to show the division of this area. One method might be to run a strip of colored tape down the center, and continue it across the floor. If cleaning the floor loosens the tape, it can be replaced.  $\Delta \Delta$

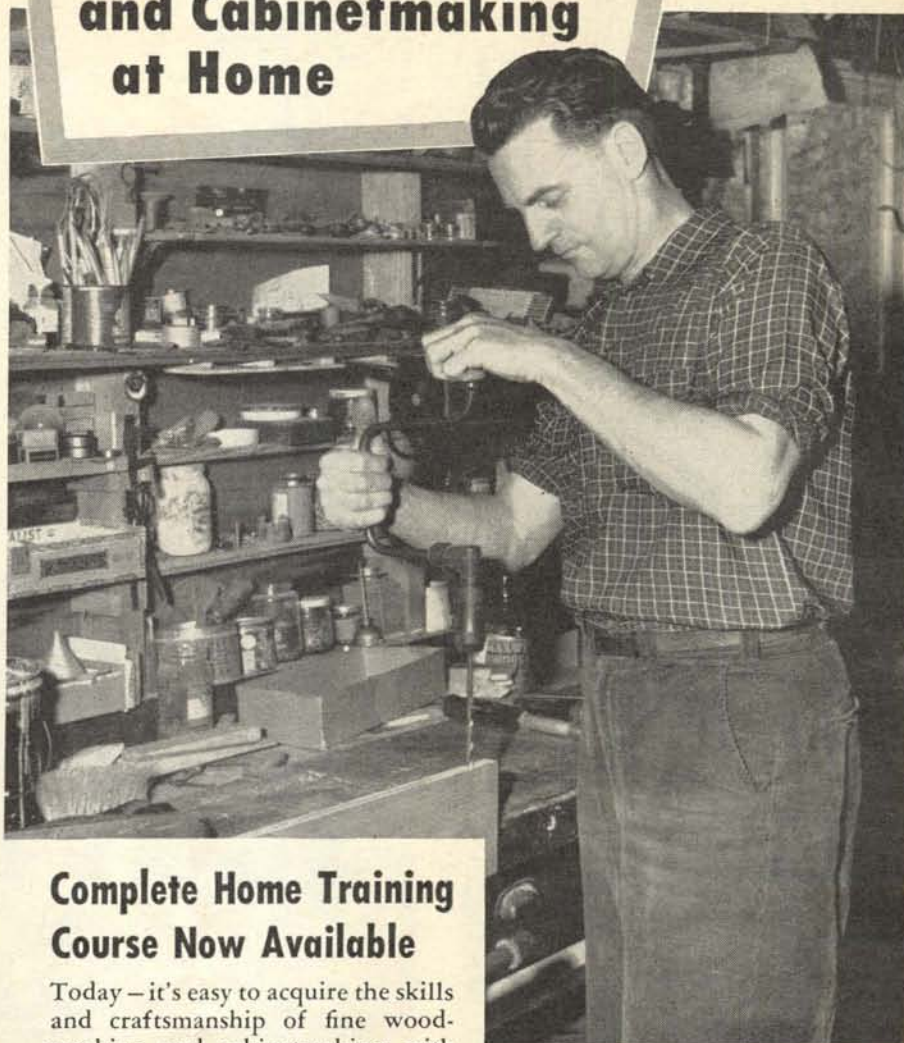


# Soldering Aluminum



RAPID OXIDATION on the surface of aluminum has always made it difficult to solder. Fluxes, such as the rosin and acid types used on other metals to remove the oxidation, have never done a completely satisfactory job for the average do-it-yourselfer. The solution to the problem now is available in a glass-fiber brush and flux-free solder manufactured by the Reynolds Metals Co. The aluminum to be soldered first is tinned by pre-heating with a torch—a propane torch is ideal—and solder is applied to form a molten pool. The glass brush then is run through the solder to rub the aluminum surface below the solder. The rubbing action removes the oxidation and the solder bonds to the aluminum. The tinned parts now are clamped together and additional solder is applied to the tinned surfaces to form a fillet, as would be required on two pieces joined at right angles as in the photograph. While the solder is still molten, the glass-fiber brush can be used to smooth the fillet, producing a professional-looking job. Both the solder and refill brushes are available for the brush, which consists of an L-shaped aluminum rod fitted with a wooden handle. One spare brush is provided with the original kit, as well as one length of the flux-free solder. △ △

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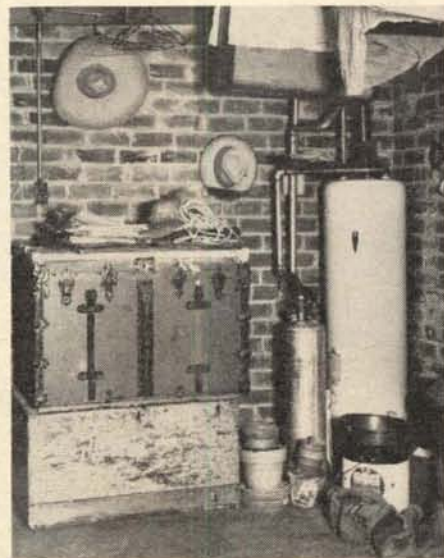
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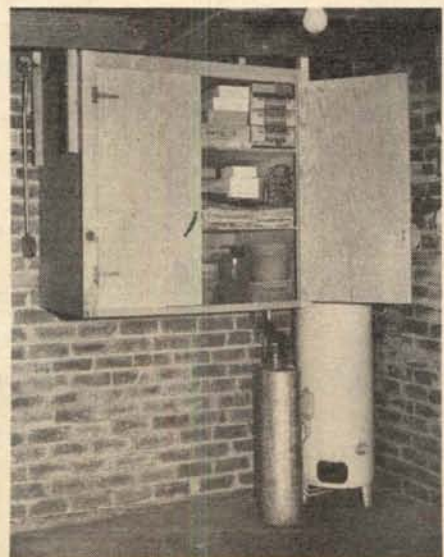
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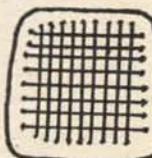
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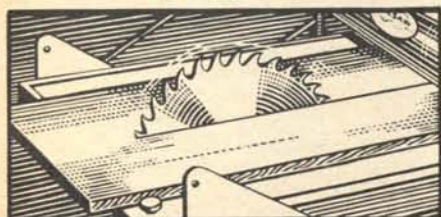
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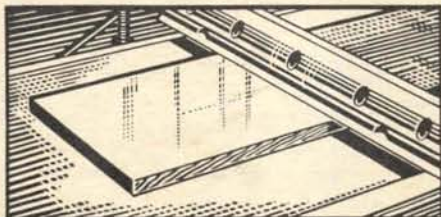
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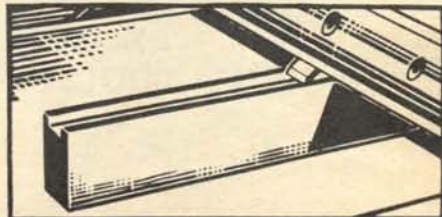
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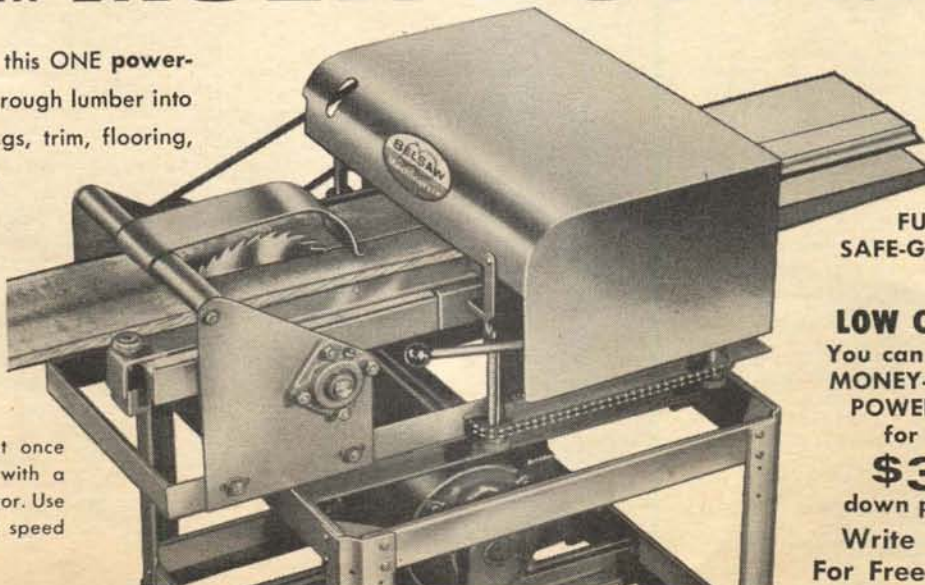
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## WORKBENCH

### RESEARCH DEPARTMENT

Each issue in this column we will choose questions on home and shop subjects from letters sent to us. Only those questions which have wide appeal will be answered here. Questions on specialized subjects will be answered by individual letter.

Dear Research Editor:

My basement measures 24 x 30 ft. and I'd like to utilize about 18 x 24 ft. of the area as a recreation or family room, making the balance of the floor area serve as a utility room. The basement is dry, no seepage or backup from the storm drains. My question is, what should I do with the walls, which are laid up of concrete blocks to the grade level?—A.G., Wis.

Dear Mr. A.G.:

We'll have to begin with several assumptions and then proceed with our answer based largely on these. In the first place, the basement may appear to be quite dry throughout the year, but if you were to test the humidity during the summer months you would find it rather surprisingly high. The fact that the humidity will remain at a fairly high level during the summer months should be taken into account when planning any wall covering. And even though the basement has never flooded, this possibility cannot be disregarded entirely. You do not give any preference in wall coverings. There are several which are suitable and attractive and withstand water damage in varying degrees. The softboards (insulating planking) make a most attractive wall covering for a basement family room but would be irreparably damaged by flooding, particularly if water soaked for more than a few hours. The hardboards would have somewhat greater resistance, but would still be vulnerable if they remained in water for any appreciable length of time. Of the wooden planking, white pine would be discolored by flooding, but would otherwise not be damaged appreciably. Of all the readily available wooden planking, Western red cedar and pecky cypress are the most durable perhaps, and certainly are the least affected by flooding. These we could recommend as perhaps

the most permanent. But it should be kept in mind when planning the wall covering that all-panelled walls are rather monotonous decorwise. Often it is best, especially in a rectangular room, to cover one, and perhaps two walls with wooden panelling and finish the remaining area in some other treatment. For example, you could finish an end wall with wood or any of the other panelling materials, and cement-plaster the remaining wall areas and finish these with a colored masonry paint. Or, where the recreation area is partitioned, it usually is best to wood-panel the partition and finish the remaining walls with cement plaster. In this way you would get a sound and durable job. And attractive, too. If you install wooden panelling or any of the composition materials over masonry walls, the latter should be thoroughly cleaned of all loose materials and then coated with hot asphalt or a suitable masonry waterproofer. Then the covering is installed over wooden furring strips attached to the masonry with lead screw anchors. One thing to remember when installing wooden panelling: where the panelling runs from corner to corner of the room always allow at least 1/2" at each end for expansion. If the panelling is fitted tightly at the corners, expansion of the wood may be great enough to crack the masonry. During the warmer months humidity can be kept at a low level with an automatically controlled electric dehumidifier.

Research Editor:

I want to paint my frame house this coming spring and I'm undecided about what kind of paint to use. The old paint is still in good condition and only one small area shows any signs of peeling. This time I want to use a good paint that won't peel or weather away for a reasonable time. The old paint shows weathering. I don't know what kind of paint it was. I have been told to use a chalking paint, whatever that is. They say it will stay white longer and won't collect dirt. Can you tell me what a chalking paint really is, is there actually such a thing, and is it good?—A.W., Miss.

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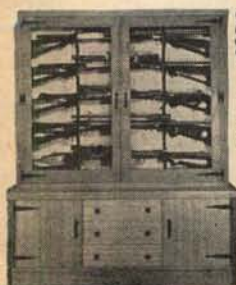
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Dear Mr. A. W.:

We do not know just what you mean by "weathering." All common paints wear away, as it were, in time. This is due to oxidation of the vehicle which gradually weakens as a binder for the pigment. This is, of course, a slow process lasting for several years. Erosion of wind, dust, and the effects of direct sunlight all contribute to the eventual breakdown of the paint film. Peeling is caused by moisture which penetrates the wall from the room side, passes through the wall and gathers under the paint film. In time it will break the bond and the paint film peels from the wood. A chalking paint is a special type of house paint compounded in such a way that a very small part of the pigment is continually eroded away by the elements. In the process airborne dust, which causes white paint to take on a gray cast, is carried away with the pigment, leaving the surface in the original white. Due to this action a chalking paint will remain white throughout the life of the film. It offers the same protection to the wood underneath as any other type of common house paint. We assume from what you say in your letter that you intend to paint the house white over the original which was also white. If the original is still in good condition, as you say, then very little preparation of the surface will be necessary. Just wire-brush lightly to remove dust and any loose material. Apply the new paint only when the surface is dry and the weather fair.

Research Department:

I have an old home and in the winter time when the place is heated the floors squeak when walked on. The floor boards are oak, 13/16" thick. All of them seem to be loose on the subfloor, which is laid diagonally. The floor joists are 2 x 8s on 16" centers. There's a basement under only a part of the house. What can I do with these floors to stop the squeaks?—O.D., Pa.

Dear Mr. O. D.:

You did not say but we'll assume there's a crawl space under that part of the structure where there is no basement. You have a choice of several methods. Floors that squeak and are even slightly springy usually have been inadequately nailed to the subfloor. One method, quite permanent, calls for locating the joists on the surface of the top floor. If the joists are uniformly spaced you can do this by locating one next to a wall and then measuring and striking chalk lines over the others. Drill and counterbore holes on the chalk lines, drive in long, flathead screws and drive screw-hole plugs into the counterbores. Hole plugs of this type are available in a variety of woods. Select a wood that contrasts with the floor and you'll finish with an attrac-



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tive ranch-type floor, if you are careful to achieve a random spacing of the plugs. This method has one or two disadvantages, but it is a fairly reliable and permanent remedy. Of course, the floor must be sanded and refinished after this treatment, but in the end you get a very attractive job. Another method which is a similar procedure is to drill holes through the top floor only, the holes taking a large finishing nail in a snug fit. Drive the nail flush and then seat the head below the surface with a nailset. Fill the small holes with wood putty and sand smooth. Another method calls for drilling screw holes from below through the subfloor and driving screws into the top floor. With this method you can center a line of screws between the floor joists, working from the basement and the crawl space, of course. This method also is quite effective and does not deface the surface of the top floor in any way. Of course, you must be careful to select screws of the correct length to enter the top floor boards, but not break through them when seated.

Dear Research Editor:

I have an old upright piano which I would like to refinish, if such a procedure is considered practical. The tone of the piano is still very good, but the case, which I think is walnut is in rather bad condition. There are nicks in the corners, many worn spots and the finish is badly checked. I'd thought of taking all the old finish off down to the bare wood, but I am told that it is possible to sand off the checks and other imperfections and build up a new finish on the remaining old finish. Is this practical, and what result is one likely to get?—F.S., Kan.

Dear Mr. F. S.:

Are you sure the wood is genuine walnut? The reason we raise the question is the fact that, judging from your description, the original finish is likely darkened so much that it is obscuring the grain and color of the wood, making the wood difficult to identify with certainty. You evidently do not wish to refinish with paint, so we shall consider ways of restoring the case in the natural color of the wood. As a rule it's a rare old piano that is not worth refinishing, especially if, as you say, its tonal qualities are still good. The cases of old pianos of the better quality usually were made from beautiful native and imported woods of selected grade. But on an old one in the condition you describe, a top-rate refinishing job is going to take some doing. As the first trial step we'd suggest that you try an old method. You'll need fine pumice, about 000 grade, a pint or so of refinisher's rubbing oil and a brick faced with felt about 1/4 in. thick. Glue the felt to the flat face of the brick with household cement. Then mix rubbing

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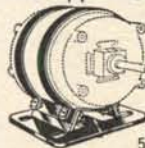
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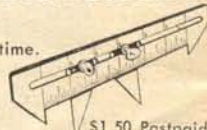
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oil and pumice to a creamy paste and pour into a shallow container large enough to permit dipping the felt-faced brick into the mixture occasionally to recharge the felt with the abrasive cream. Now wash the flat surfaces of the piano case with a mild, soap-and-water solution to remove dirt. Allow to dry and then begin rubbing with the abrasive-charged felted brick. Even though 000 pumice is very fine, it cuts fairly fast on old varnish, and for this reason you should stop occasionally, clean off the creamy abrasive residue and closely note the result. The trick in this procedure lies in stopping the rubbing at just the right time. That time comes when you cut through to the bottom of the fine checks. Go much farther and you expose the bare wood. So, as the rubbing reduces the checks, keep a sharp watch of progress. Shortly after you start rubbing you will begin to see the grain more clearly. It will gradually grow more defined as the rubbing progresses and the cloudiness of the old finish is removed. Continue the rubbing with less pressure on the brick and clean off the work at more frequent intervals. Watch closely for any dull spots that may appear, which means that you have cut through the last of the finishing coats. By this time the surface should look pretty much like new, with the grain of the wood showing clear and sharp. Continue this procedure until you have worked over all the flat surfaces, bringing them to about the same degree of sheen. Turnings and carvings, if any, should be scrubbed with a fairly stiff-bristle brush charged with the abrasive cream. Nicked corners can be repaired by cutting away damaged wood with a sharp chisel and gluing in a piece of new wood. Sand the patch down to the level of the adjacent wood and stain to match. All this done, you should have something easier to look at, but the job is likely to show dull spots here and there. Clean off oily residues with a solvent and touch these spots lightly with a thin coating of reduced clear shellac. Reduce regular shellac 50 percent with alcohol for this job. Allow the shellac to dry 24 hours, then go over all surfaces lightly with fine (0000) steel wool and dust off thoroughly. Refinish with a self-leveling bar-top finish of the semi-gloss type. When dry the last coat can be rubbed to a dull sheen with fine (0000) steel wool.

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WORKBENCH Magazine published bimonthly at Kansas City, Mo., for January-February, 1960. 1. The names and addresses of the publisher, editor, managing editor, and business manager are:

Publisher, John E. Tillotson II, 543 Westport Rd., Kansas City 11, Mo. Editor, Jay W. Hedden, 543 Westport Rd., Kansas City 11, Mo. Managing editor, none. Business manager, none.

2. The owner is: Modern Handcraft, Inc., 543 Westport Rd., Kansas City 11, Mo.; John E. Tillotson, II, 543 Westport Rd., Kansas City 11, Mo.; John E. Tillotson, 543 Westport Rd., Kansas City 11, Mo.; C. S. Tillotson, 543 Westport Rd., Kansas City 11, Mo.; Mary Ida Sullivan, 543 Westport Rd., Kansas City 11, Mo.; Wilburn L. Mead, 543 Westport Rd., Kansas City 11, Mo.; Lee Gingery, 543 Westport Rd., Kansas City 11, Mo.; Sarah Peery, 543 Westport Rd., Kansas City 11, Mo.; Flower & Garden Foundation, 2318 W. 95th St., Kansas City 15, Mo.

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John E. Tillotson II

Sworn to and subscribed before me this 28th day of September, 1959—N. G. Veenboer, Notary Public, Jackson County, Missouri. (My commission expires Oct. 12, 1962.)

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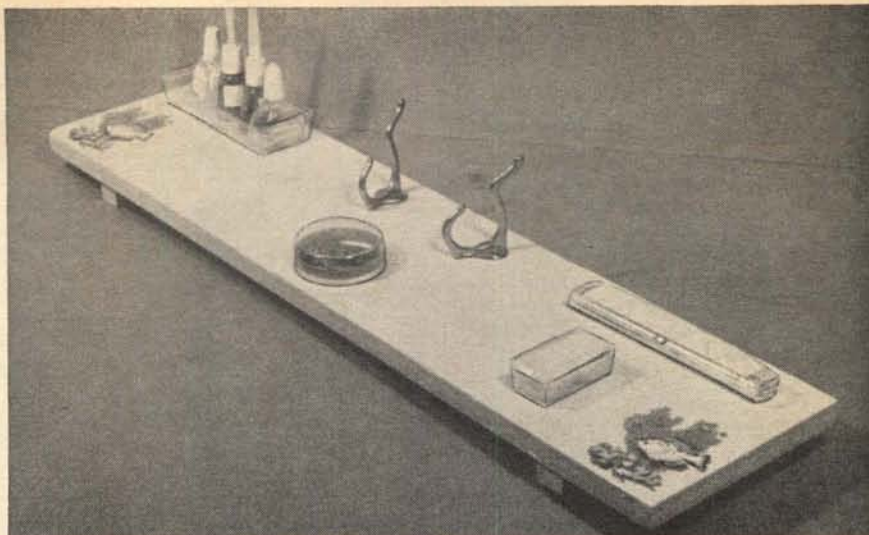
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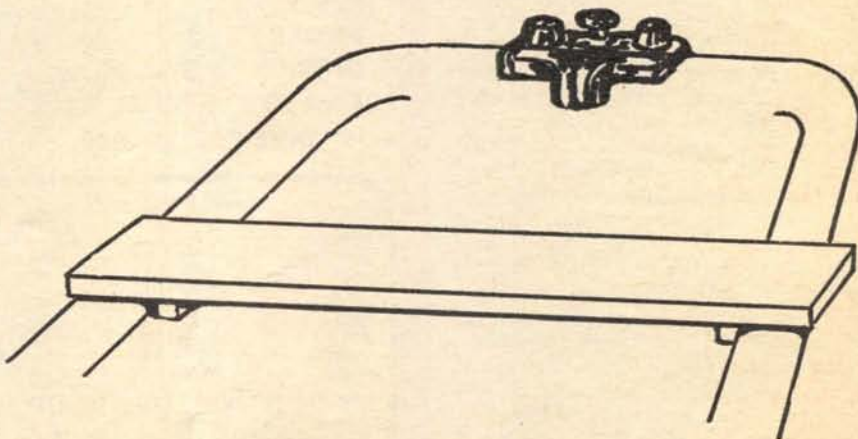
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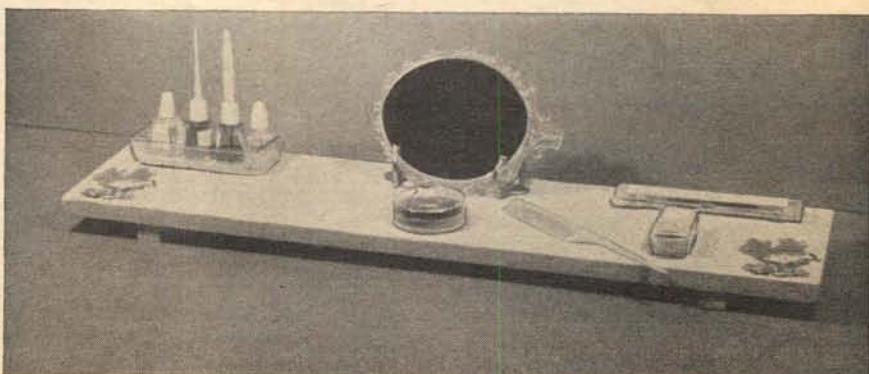
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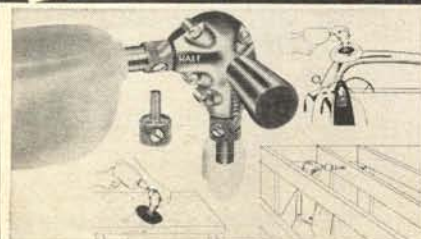
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**ARCO ARROW METAL PRODUCTS CO.**  
Dept. WB-1A, 421 W. 203 St., N.Y. 34, N.Y.

NOW... make the ring you always wanted. Design and finish to high luster own Nickel-Chromium (stainless) steel ring. Bored stock has extra large flat head. Instructions and polishing papers included. State hole size: 1/2" — 9/16" — 5/8" — 11/16" — 3/4" — 13/16". \$1 postpaid. No COD.

Solar Master Products, Box 35-N, Midland Park, N. J.

## 90 PATTERNS LAWN ORNAMENTS-NOVELTIES

FULL SIZE patterns up to 20" high of Dutch Boy and Girl, Dwarf, Penguin, Fishing Boy, Animals, Birds, Novelties and many other popular items. Easy to make and sell. Just trace, cut out and paint. Send \$1.00 today for the LAWN ORNAMENT PACKET containing all 90 patterns.

**MASTERCRAFT PLANS, Dept. J2B**  
7041 Olcott Avenue Chicago 31, Illinois

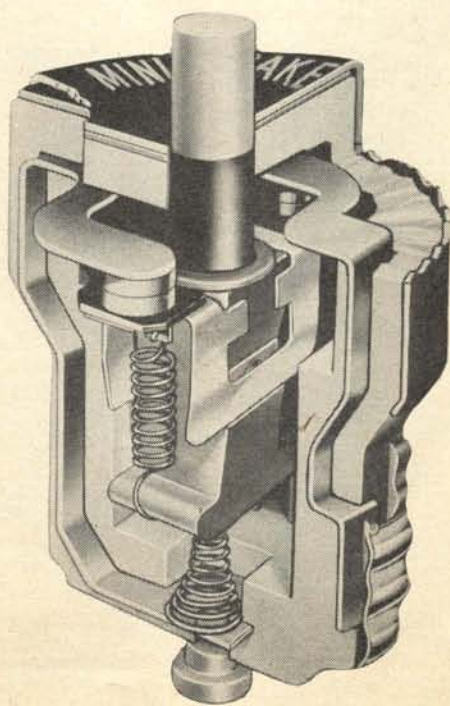


## "Circuit-Breaker"

Fuse



BLOWN FUSES are more of a problem in the home workshop than in the rest of the house because of motors on power tools being run under load, with several motors sometimes being run at the same time. A home craftsman can save himself the sometimes annoying chore of replacing blown fuses by using "Mini-Breaker" fuses in place of the usual type. Available in several amperage ratings, the Mini-Breakers allow for the starting surge of current required for electric motors, but will trip instantly when a short circuit occurs, preventing motor burn out. After tripping, about ten seconds is required before the circuit-breaker can be reset. Ideally, a separate fuse board or box should be set up for the workshop, so electrical troubles in the shop will not affect the rest of the house. Mini-Breakers would seem to be the answer to the fuse-replacing problem with full assurance of complete protection for power-tool motors. Δ Δ



## Unusual Tools

Such tools, that are hard-to-find or not available elsewhere, increase the scope of the projects that can be made in the workshop.

You will also be interested in our line of fine woodworkers' tools made by Marples of Sheffield—chisels, wood turning tools, wood carving tools and other Sheffield steel edge tools.

Send 10c coin or stamps (deductible on first order) for 16 page catalog No. W.

## WOODCRAFT SUPPLY CO.

39 Washington St.  
Boston 14, Mass.

### DOWEL PLATE



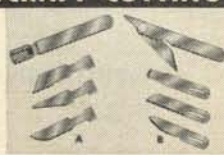
## Drycleans Clothing for Only 10c Per GARMENT



Saves Drycleaning Bills. Easy Quick. No experience required. Do your garment cleaning at home. Simply clean by dipping. No rubbing. NEEDS NO RINSING. Delicately performed. Leaves clothes absolutely clean, free of dirt, perspiration odors. For finest Silks, Satins, Rayons, Nylons, Dresses, Suits, Sweaters, Scarfs, Gloves, Linen, Drapes, Bedspreads, Hosiery, Ties, Towels, etc. Earn money! **SAMPLES FOR TRIAL** Sample offer sent immediately to all who send name at once. Hurry—just a postcard will do. **SEND NO MONEY—just your name.** KRISTEE CO., Dept. 1706, AKRON 8, OHIO

## HANDICRAFT CUTTING TOOLS

Either tool \$1.00 each. In Ohio add 3% state tax. Prepaid by return mail.



High School and College biology class inquiry invited. Use school letterhead for special discount.

### A "MUST" FOR THE HANDICRAFT WORKER

Our unique cutting tools are made to the very latest fitting principles. They are simple to operate and the blades are easily interchangeable. They are the safest and most perfect tools yet devised for cutting purposes. Made with Lifetime Brass handles 4 inches long. Blades are long lasting finest Sheffield Steel. **MONEY BACK GUARANTEE.**

**ROBERT J. COSTILL • EXPORT-IMPORT**  
2424 KRUMROY RD., AKRON 12, OHIO

## SECRET to better WOODWORKING! KenKraft Dowel Centers



Eliminate mismatch between mating dowel holes! Simply drill one piece; insert KenKraft Dowel Centers; press or tap against adjoining piece. Dowel locations are perfectly marked! Accurate, thousands in use, will last a lifetime! Satisfaction guaranteed. 3 pairs (6 centers), 3 sizes sent postpaid for \$1.00.



Send \$1 bill, check or money order NOW!

## KENKRAFT

Box 1596, Dept. 5, Manhattan Beach, Calif.





The charge for classified advertisements is 70 cents a word payable in advance by check, cash or money order. All classified set solid, without display, leaded, or blank space. All copy subject to publisher's approval. For clarity, please type or print your copy. Be sure that check, currency or money order accompanies copy. When figuring the number of words be sure to include name and address. For example: W. C. Jones, is three words. Send your copy in at once. Closing date for classified advertising is the first of the second month preceding publication. Minimum 10 words.

## AGENTS AND SALESMEN

**MEXICAN ART GOODS!** Free Sample! Send 14c stamps mailing. Sylviaw, Apartado 9036, Mexico City.

**EASY HANDWORK** makes fast-selling useful articles. Sample free. Sunmade Company, Brockton 64, Massachusetts.

**BUY WHOLESALE:** 100,000 Nationally Advertised Products. Appliances, Cameras, Sporting Goods, Housewares, Watches, Typewriters, Tools, Clothing, etc. Discounts to 60%. Buy-Rite, Box 258, Hawthorne 6, New Jersey.

**SEEKING NEW PRODUCTS?** Get my outfit 47 money-making specialties. Latest conveniences for home, car. Send no money. Just your name. Kristee 114, Akron, Ohio.

## ARTIFICIAL FLOWERS

**BIG PROFITS.** Make fast-seller chenille holiday flowers, monkey trees, dolls. Kits, materials. Literature free. Velve, Bohemia 19, N. Y.

**BUY DIRECT!** Discount Flower Material catalog, 10c. Flocraft, Farrell 8, Penna.

**DISCOUNT PRICES** on Wood Fibre and Materials. Catalog 50c, includes monthly specials. Fibre Craft Co., Box 96, Manville, R. I.

## BUSINESS OPPORTUNITIES

**MONEYMAKING OPPORTUNITIES** Galore! Free Copy. Popular Mechanics Classified, 210-WH East Ontario, Chicago 11.

**MAKE NEW** Greaseless Doughnuts in kitchen. Sell stores. Free recipes. Alfred, 3605 South 15th, Minneapolis 17, Minn.

**\$3.00 HOUR.** Making, fitting, Comfort Sandals. Youngs, 1308 PH South First, Arcadia, Calif.

**MAKE \$25-\$50 WEEK,** clipping newspaper items for publishers. Some clippings worth \$5.00 each. Particulars free. National, 81-PH, Knickerbocker Station, New York.

**GROW ORCHIDS** at home. Profitable, fascinating. Successful home grower explains special light, temperature and humidity conditions orchids need. Free—full details. Orchids, 100 S. Vermont, Los Angeles 4.

**NEW HOME-IMPORT** Mail Order Profitability! Your mailbox stuffed with money! No selling. No experience. No investment. We supply everything. Free Details. Mail Order Distributors (Import Division), 15201 South Broadway, Los Angeles B131C, Calif.

**\$250.00 WEEK PROFIT** possible. Earn at home spare time with fascinating Printing method. \$5 starts you—send no money now. Free Confidential Facts and Valuable Samples. Screen-Print, TY, Los Angeles 61.

**GROW LIVING** Miniature Forest (only inches high)—or orchard that bears tasty tiny fruit. Learn amazing Dwarfing secrets! Fascinating hobby! Profitable Home-business opportunity! Free Seeds and Plan. (State your age.) Miniature Nurseries, Dept. JFY, Gardena, Calif.

**MAKE MONEY** Writing Short Paragraphs! No tedious study. I tell you what to write, where and how to sell; and supply list of editors buying from beginners. Many small checks add up quickly. Write to sell, right away. Send for free facts. Benson Barrett, Dept. C-9-N, 7464 Clark, Chicago 26.

**EARN HOME** Profits Preserving Flowers. Write: Mountinside, Springwater 8, New York.

**"EVERYBODY LIKES CANDY"**—Make professionally home. Instruction—Tools—Supplies, Details free. (Our 49th Year.) Ragsdale Candies, LB107, East Orange, New Jersey.

**LIQUID MOLDING** Rubber. Free Sample. Shellcraft Supplies. Chaney, 1907-D East Road, Jacksonville 11, Fla.

**INVISIBLE REWEAVING:** \$5 in one hour possible reweaving burns, tears, moth-holes. Spare-full time. Free details. Skil-Weave, Dept. WC-51, 335 W. Madison, Chicago 6.

**BIG MONEY**—Operate own fix-it shop. Service household appliances, motors, mowers, saws, skates, etc. Free book. Christy Trades School, A-464, 3214 W. Lawrence, Chicago 25.

**RUBBER FOR MOLDS,** Extra Thick. Free Sample. W. Wooley, 2801-P Latrobe, Peoria, Ill.

**FLOWER ARRANGING** and Floristry. We teach you to create floral arrangements with professional skill. Flower growing lessons included. Unique home study course. Countless money-making opportunities. We show you how to earn as you learn. Free booklet. Norm & Sue Morris' National Floral Institute, Studio WBC-10, 11826 San Vicente Blvd., Los Angeles 49, Calif.

**FREE SAMPLE Kits**—Make big money at home making beautiful plastic flowers, plants, colorful puff-bud branches. Send quarter for color catalog. Free sample kits included. Lady Carol, Inc., Dept. BW, Box 8605, Ft. Lauderdale, Fla.

**PLATE BABY** shoes, jewelry, gifts in Bronze or Colored Pearl. Free Booklet. Harrison, 11029 South Vermont, Los Angeles 44.

**SHARPEN-SCISSORS,** pinkers, Capable, inexpensive outfit. Supplies. Blackhawk, Sheldahl 2, Iowa.

**EARN \$240.00 A MONTH** at home, spare time doing only Two \$5.00 Invisible Mending jobs a day. Big money paid for service that makes cuts, tears disappear from fabrics. Steady demand. Details free. Fabricron, 6258 N. Broadway, Chicago 40, Ill.

**FREE IMPORTS** from Overseas. Particulars Free. Henry Bassen, Importer, 828 Fullerton, Chicago 14, Ill.

**"50 NEW Home-Business Ideas"** Booklet, sample Free. Spray exotic Velvet-Suede on anything. Flocraft-JY, Los Angeles 61.

**PLAQUES—FIGURINES**—Molds. Free Details. Russ, 1194 Brooklyn, Brooklyn 3, N. Y.

**DOLLS! DOLLS! DOLLS!** We teach you to repair, make, sell all kinds of dolls and accessories including clothing. Study at home. Earn while you learn. Free Catalog. Doll Hospital School, Studio WBC-10, 11826 San Vicente Blvd., Los Angeles 49, Calif.

## CONTESTS

**WIN CONTEST** Money. General Contest Bulletin gives hundreds of tips. Lists current contests, rules. Sample 25c. General Contests, 1609 East 5th, Dept. 343 Duluth 12, Minn.

## CRAFT SUPPLIES

**FREE** Illustrated Crafts Brochure. Leathercraft, Tile, Coppercraft, Woodcraft, Castoglas, etc. Economical easy-to-make complete kits. Larson Leathercraft, 820 South Tripp, Dept. 9131, Chicago 24.

## EARTHWORMS

**FREE PICTURE** Folder, "How to Make \$3,000 Yearly, Spacetime, Backyard, Raising Earthworms!" Oakhaven-27, Cedar Hill, Texas.

**\$1,000 MONTHLY POSSIBLE,** raising Earthworms—African Giants! Backyard, Garage, Basement. Complete Illustrated Booklet, explains raising, feeding, packing, marketing. Send 25c! Ozark Worm Farm-B, Willow Springs, Missouri.

## ELECTRICAL EQUIPMENT

**ELECTRO-Scribe:** Engraves all Metals, \$2.00. Beyer Mfg., 10511-M Springfield, Chicago 43.

## FLOWER ARRANGERS SUPPLIES

**DRIFTWOOD INSTRUCTIONS,** finishing, uses, basic rules for Flower Arrangers with photos, \$1.00. A B C, Box 217, Auburn, Calif.

## GUNS

**WOODCARVING, GUNSTOCKS.** Miniature animals, figurines. Hermania Anslinger, 320 South Ralph, Spokane, Wash.

## HOME CRAFTSMEN

**WOODWORKING** and Cabinetmaking course for beginning and advanced home craftsmen. Only complete low-cost home training program available. Write for free booklet, Interstate Training Service, Dept. G-7, Portland 12, Oregon.

**42 FULL** size shelf patterns. Colonial, Modern and Antique designs. All for \$1.25. Mastercraft, J15B, 7041 Olcott, Chicago 31.

**LEARN ART** Metalcraft and jewelry making. Complete, inexpensive, home training course now available. Special tools and materials furnished. Write for free booklet. Interstate Training Service, Dept. L-7, Portland 12, Oregon.

**NEW 2-PART "Epoxy"** chemically bonds anything permanently, even glass and metal. Small amount of "2-Weid" goes a long way. Amaze yourself with what you can repair. Complete kit, \$3.00, postpaid. Money-back Guarantee. Send cash, check or money order to Department M, Rowell Products, 752 Vandalia, St. Paul 14, Minnesota.

**"POWER DRIVES Handbook"**—36 pages illustrating many types motor drives for model autos, boats, displays, turntables, etc. Mail 25 cents cash, returnable first order \$3.00 or more. Wilson's of Cleveland, Dept. WB, P. O. Box 8995, Ft. Lauderdale, Fla.

**30 BIRD** house and Feeder patterns for Martins, Wrens, etc. Only \$1.25. Mastercraft, J16B, 7041 Olcott, Chicago 31.

**55 NEW TIN** can Projects. Detailed layout. \$1.50 Postpaid. Satisfaction Guaranteed. Dilworths, Monkton, Maryland.

## HOME MOVIES, COLOR SLIDES

**FREE!** Blackhawk's big sale catalog 8mm., 16mm. movies, 2"x2" color slides. Biggest selection anywhere! Projectors, cameras, supplies—big discounts! Get free, every three weeks, 12-page newspaper size bargain list! Blackhawk Films, Davenport 21, Iowa.

## INSTRUCTION

**SPEND LESS**—Have More! Valuable suggestions, Free! Better Living Program, 605-C, West Lake, Minneapolis 8, Minnesota.

## JEWELRY AND FINDINGS

**FREE GEMSTONE** and Finding Catalogue. Rhinestone Supply Co., Scottsdale, Arizona.

**QUALITY FINDINGS:** Fraternal Emblems: Crosses, Stars, Medallions. Chains. Big Line—low prices—100% satisfaction Guaranteed. Wholesale Catalog, 10c refundable. Caraday, Dept. WB-1-60, Box 22, West Hempstead, New York.

## LEATHERCRAFT

**SKIL-CRAFTS**—World's finest and largest selection of Leathercraft, Hobby Craft, Art & Craft Supplies. Free billfold or leathercraft kit with first purchase. Send 25c latest catalog. Skil-crafts, Box 167, Joplin, Mo.

## MINERALS & PRECIOUS STONES

**ROCKHOUNDS—GEM CUTTERS**—Jewelry Makers... new Free catalog—just off the press! Biggest supplier to hobbyists and craftsmen offers you tools, materials, equipment, introductory bargains and know-how. Free Catalog... Write Grieger's, Dept. C-5, 1633 E. Walnut, Pasadena, Calif.



## MISCELLANEOUS

YOU CAN Chalk Talk. 44 page Catalog, 10c John Balda, Trick Cartoonist, Oshkosh, Wis.

FOR SALE: Holt Floor Sander and Edger at half price. G. Roose, Pella, Iowa.

100 DOUBLE EDGE Blue Blades fits Gillette type razors. Unconditionally Guaranteed. Enclose \$1.00 (no stamps). Blade-Mart, Box 526, Middletown, Conn.

## MUSIC, MUSICAL INSTRUMENTS

SWISS MUSICAL Movements (Best) \$2.50. Electrical \$5.75. Spielman, 131 West 42nd, New York 36.

## OF INTEREST TO WOMEN

\$200 MONTHLY POSSIBLE. Sewing Babywear! No house selling. Free information. Send name to Cuties, Warsaw 4, Indiana.

MAKE MONEY weaving rugs at home for neighbors on \$79.50 Union Loom. Thousands doing it. Booklet free. Union Loom Works, Dept. 65, Boonville, New York.

MAKE LEATHER Garments. Full Instructions 25c. Free Leathercraft Catalog. Tandy Leather Company, Box 791-E32, Fort Worth, Texas.

HOMEWORKERS: Assemble handlaced precut mocassins and handbags. Good earnings. California Handicrafts, Dept. 3, Los Angeles 46, Calif.

STAMPED LINENS for embroidery or painting. Buy direct from manufacturer and save. Send for Free catalog. Merribee, 16 West 19th St., Dept. 730, New York 11, N. Y.

HANDCRAFT CATALOG 25c; Unusual, different, Gift Catalog 25c; Sewing Ideas 25c; EZ made items from coat hangers 25c; Jiffy made items 25c. All five above \$1.00. Leisure Hour Products, Freeland 5, Penna.

LEARN EXPERT Cake Decorating, Candy Making. Free details to housewives! Candy & Cake, Dept. 571, Fallbrook, California.

## OLD GOLD & JEWELRY WANTED

HIGHEST CASH for Old Gold, Jewelry, Gold Teeth, Watches, Diamonds, Silverware, Spectacles. Free information. Rose Refiners, Heyworth Bldg., Chicago 2.

## PATENTS, INVENTIONS

INVENTIONS WANTED immediately for promoting on cash or royalty. Patented, unpatented. Free booklet outlines royalty rates, requirements. Write Kessler Corporation, C-611, Fremont, Ohio.

## PLASTICS

PHOTOSEAL Electric Laminating Kit. Fun or profit. \$14.95. Therm Appliance, St. Charles, Ill.

## SHELLCRAFT

SEASHELLS, SHELLCRAFT and Jewelry Supplies. Illustrated Catalog 25c, refunded on first order. Florida Supply House, Box 847H, Bradenton, Fla. Our 25th Year.

## STAMPS

TERRIFIC STAMP Bargain! Israel—Iceland—Vatican Assortment—plus Exotic Triangle Set—Also Fabulous British Colonial Accumulation—Plus Large Stamp Book—All Four Offers Free—Send 10c to cover postage. Empire Stamp Corp., Dept. PH, Toronto, Canada.

225 STAMPS only 10c with approvals. Mystic, Camden 22, N. Y.

100 OLD U. S. stamps between 1861 and 1935 only \$1.00. Roush Stamp Co., 51 Chestnut, Mansfield, Ohio.

U. S. COMMEMORATIVES 1c each. Send stamped envelope. Box 1666, Wilmington, Delaware.

## WOODWORKING

MAKE \$46 From Square Foot Plywood; Jigsaw necessary. Free Information. Woodarts C-7, Bridgewater, Mass.

\$200.00 MONTHLY. Spare Time. With Tablesaw, Bandsaw or Jigsaw. Write: Holiday House, 7220 4th Plain, Vancouver, Washington.

WOODWORKING CATALOG and Manual. Brand New 1960 Edition! World's largest selection of domestic, imported woods—materials, tools, supplies, do-it-yourself plans, projects. 130 pages, many full color. Send 25c (refunded first order). Year's subscription to "Chips and Chats" included Free. Constantine, 2050 Eastchester Road, Dept. T-115, New York 61, N. Y.

## SOMETHING TO SELL ? to a quarter million ?

Try a classified advertisement and reach ¼ million home do-it-yourself enthusiasts. Only 70c per word.

USE THIS HANDY INSERTION ORDER. Please Print.

Workbench  
Handcraft Bldg.  
Kansas City 11, Mo.

Enclosed find \$.....for.....months' insertion of the following advertisement in the classified columns of WORKBENCH, at 70c per word per issue (including name and address). Minimum 10 words.

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CITY ..... ZONE.....STATE .....

**Make Money DEMONSTRATE EMBROIDERING WITH PAINTS**

Be a Home demonstrator. Make 40% profit selling Stamped Linens specially designed for painting and PERMA-GLO Paints in Ball Point Tubes. Newest ragel! Easy to do. Write PERMA-GLO, 20 W. 19th St., Dept. 163, New York 11, N. Y.

Send For FREE CATALOG & SELLING PLAN

## DOLLS!

learn world's most fascinating business



We teach you to make, repair, and sell all kinds of Dolls and accessories. Study at home. Excellent money making opportunities in every locality. Start a business part or full time. Easy to learn. Low monthly payments—many pay for their course out of earnings made while learning. We show you how. May we send FREE and without obligation our informative booklet? No salesman will call. For an exciting future, ACT NOW!

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THE DOLL HOSPITAL SCHOOL  
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LOS ANGELES 49, CALIFORNIA

## UNUSUAL-NEW JIG SAW PATTERNS

Whether you use your jig saw for pleasure or profit, you will want this smart new set of original full size patterns—up to 21" high—for making comical pulleys, attractive lawn ornaments, popular house markers, unusual novelties, etc. (All 102 full size patterns, with simple easy to follow instructions, are yours for only \$1.00 postpaid.)  
PATTERN SERVICE, MEDWAY 3, MASS.



## TOO BUSY

to give up a few hours a year for a health checkup?

Your best cancer insurance is a thorough checkup every year, and alertness to Cancer's 7 Danger Signals.

Learn how to guard yourself against cancer. Write to "Cancer" in care of your local post office, or call your nearest office of...

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World's Largest Selection of Finest  
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Your complete wood buying  
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Craftsman is your best, most  
complete source of finest kiln-  
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woods, beautiful wood in-  
lays, colorful bandings,  
matched plywoods, em-  
bossed mouldings, carved  
ornaments, newest wood-  
working tools, "hard-to-  
find" cabinet hardware;  
more than 1,500 items!  
Packed with newest scroll  
saw patterns, project ideas  
and money making plans.  
Enclose 25c (refunded  
with first order) to help  
pay mailing and handling  
cost. Write TODAY to:

Craftsman Wood Service Co., Dept. L-1, 2729 S. Mary St., Chicago 8

**CRAFTSMAN WOOD SERVICE CO., Dept. L-1**  
2729 S. Mary St., Chicago 8, Ill.

Enclosed find 25c. Rush new Craftsman Wood Catalog.

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ Zone \_\_\_\_\_ STATE \_\_\_\_\_

## MAKE MONEY WRITING ... short paragraphs!

You don't have to be a trained author to make money writing. Hundreds now making money every day on short paragraphs. I tell you what to write, where and how to sell; and supply big list of editors who buy from beginners. Lots of small checks in a hurry bring cash that adds up quickly. No tedious study. Write to sell, right away. Send for free facts. **BENSON BARRETT, Dept. 9-N, 7464 N. Clark St., Chicago 26, Ill.**

## Wanted! HOME PRODUCERS



To be subcontractors. Cast plastic products for manufacturers in our Clearing House Service. Thousands of easily-made items required. Cash in at home, without previous experience. Set your own hours. Write today for FREE list of 100 most wanted items.

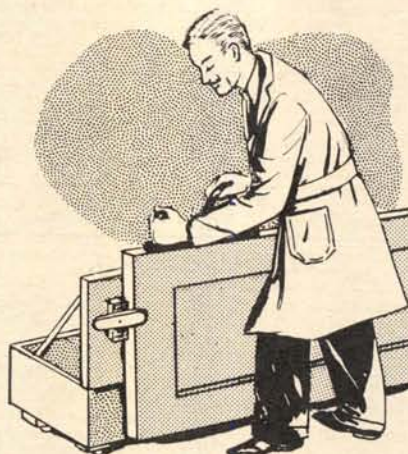
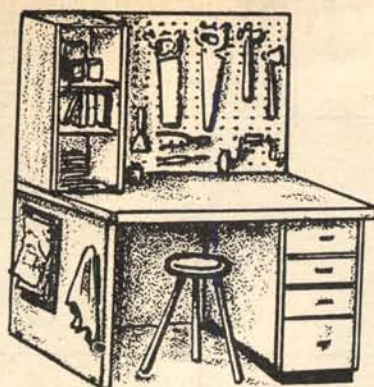
**PLASTIC SERVICE ASSOCIATES**  
Dept. WB-1, East Boston 28, Mass.

## If You Are Under 80 You Are Not Too Old For Life Insurance

Let us tell you how you can still apply for a \$1,000 life insurance policy to help take care of final expenses without burdening your family.

You handle the entire transaction by mail with **OLD AMERICAN of KANSAS CITY**. No obligation. No one will call on you!

Tear out this ad and mail it today with your name, address and year of birth to Old American Insurance Co., 4900 Oak, Dept. L106M, Kansas City, Mo.

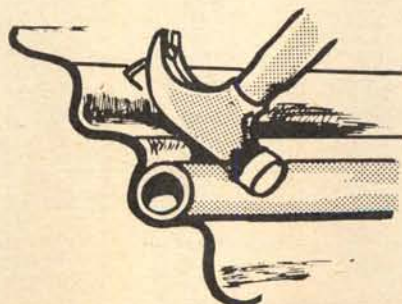


### Planing Support On Tool Chest

Supporting doors, window sash and other large workpieces for edge planing is no problem if you have a heavy tool chest, such as indicated. A simple wooden turn-button on the lid of the chest will hold the work in position. It might be necessary to fasten rubber feet to the tool chest to keep it from sliding.

*N. M. Pittman, Overton, Texas.*

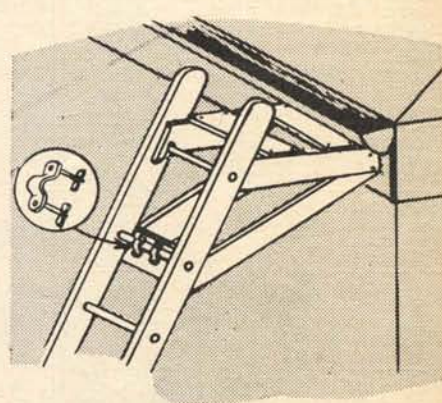
### Corrugated Roofing Saved For Future Use



When removing corrugated sheet steel from the roof or walls of a building, nails can be pulled without damaging the metal by using a short length of pipe as a fulcrum.

*M. Robert Beasley, Jackson, Mich.*

## WORKBENCH SHOP TIPS

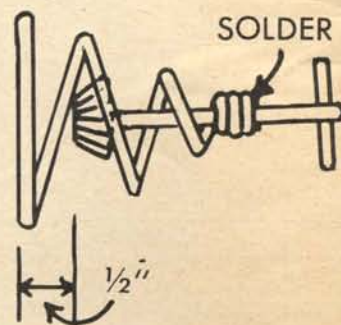


### Eavestrough Protector For Extension Ladder

Assembled from 1 x 4s, this removable bracket for a long stepladder will keep it clear of an eavestrough, yet permit you to paint or work around it. The bracket also is ideal where the eaves have a wide overhang. Dimensions will vary with the ladder and eaves. Two pipe hangers, with screws and thumbnuts, hold the bracket on a ladder rung.

*Robt. E. Williams, Canton, Ohio.*

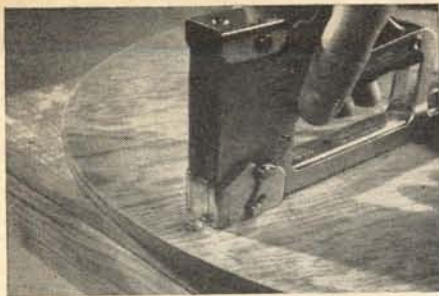
### Spring on Chuck Key Is Safety Device



Soldered to a chuck key as shown, a coil spring will prevent the key from being left in the chuck. This will eliminate the possibility of the key being hurled at the operator by the rotating spindle.

*J. C. Roby, San Diego, Calif.*





### Tacker Locks Screws

Flathead wood screws will be locked in position if a staple is driven into the screw slot with a gun tacker. As the tacker places a staple accurately in a second, very little time is required to secure a number of screws in this manner.

Ken Murray, Colon, Mich.

### Hammer Helps Loosen Tight Screw



It's sometimes difficult to loosen a wood screw driven into hardwood. This can be done easily, however, if a hammer is used to obtain additional leverage. Slip the hammer's claws over the flats of the screw-driver blade and rotate driver and hammer simultaneously.

John A. Comstock, Wellsboro, Pa.



### A Third Hand

When you could use a third hand in such work as soldering try using an empty milk carton. Cut it down to a size that suits you best and cut grooves in the sides to accommodate whatever you are working with.

Bil Toman, Palatine, Ill.

## MAGNIFYING GLASSES READS FINE PRINT

for Home, Work, Shopping, Travel



**YOUR CHOICE**  
Only **\$2.98** each  
2 for \$5.00



**SPECTACLE GLASSES** — wear like Bi-Focals, look over or under. Men and women love these handy glasses. Pen-like case free.

**CLIP-ON GLASSES** — Attach to your regular glasses. Converts them to strong magnifiers.

If no astigmatism or eye disease, satisfaction guaranteed. When ordering give age. Send check or money order. C.O.D. postage added.

DALO IMPORT CO., DEPT. 11, 4333 N. PULASKI RD., CHICAGO 41, ILL.

**LOGNETTES** — deluxe style for shopping, travel, dining. Pastel pink handle case. First time at our low price. Medium or strong lenses.

## "I Earn \$25.00 per Hour" \* Spray with Suede!

**\$1 Worth of Materials Brings You \$18—You pocket the profits!**

### WHAT IS FLOK-KRAFT?

If you've ever touched real suede or velvet — you know how Flok-Kraft feels and looks. Now, at last this beautiful new 3-dimensional finish, developed after years of experience, can be sprayed on anything — transforming ordinary things into expensive masterpieces of beauty. You must see it to believe it, so mail coupon below and receive free samples.



FREE SAMPLES — MAIL COUPON NOW!

\*Here is Mr. J. F. K. with a few of the items he has sprayed with Flok-Kraft. He is now earning \$25.00 per hour (\$400 for 16 hours work) just showing companies how to spray new Flok-Kraft.

your business grows, work full time — hire others to work for you. At first, do it all in your own home — a corner of your basement, garage, dining room, service porch or kitchen is all the space you need.

### LEARN IN A FEW DAYS

Almost immediately you can learn Flok-Krafting and start earning money. It's fun, fascinating — we guide you with simple step-by-step instructions. No overhead, no expensive equipment, no experience necessary either.

Make old (even broken) radio and TV cabinets look better than new. Spray average size cabinet in 15 minutes with 34¢ worth materials and charge at least \$10.00.

**COVERS AND BEAUTIFIES FABRICS, METALS, GLASS, PLASTER, WOOD, PLASTIC — any surface!** Huge profits are waiting to be tapped in this tremendous new field. Over 5,000 big profit uses. Spray lamps, figurines, greeting cards, signs, automobile accessories, shoes, hats, card tables, toys, furniture, draperies, ceilings, walls — anything! Flok-Kraft makes old, damaged and worn objects beautiful and saleable — makes new things worth more. You can even spray cheap butcher paper and make it look like velvet-suede, and sell it for gift-wrapping paper.



**RECONDITION WORN AUTOMOBILE INTERIORS** (doors, trunks, dashboards, seats, etc.) with Flok-Kraft. Just spray it on — works like magic!

**RAINBOW OF COLORS** Amazing Flok-Kraft rayon and cotton fibers are now available in over 24 brilliant colors — even the amazing fluorescent "glow" colors that attract attention.

**START AT HOME — SPARE TIME** Here's a rare opportunity to own your own business. Start small spare time — add to your present income. Then, as



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\$1000.00's are earned by individuals each year spraying Christmas trees with colorful Flok-Kraft. Flok-Krafted greeting cards are big business. Buy regular cards and spray them at home — sell for twice your price.



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## WORKBENCH SHOP TIPS

### Wallpapering Over Light Switches

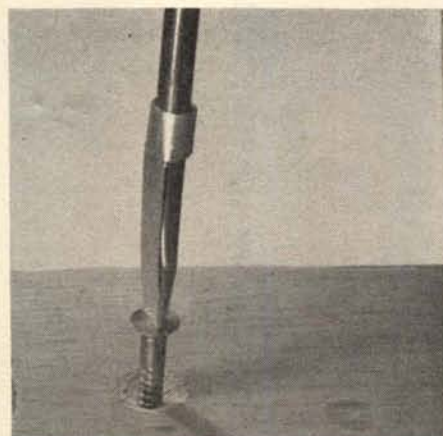
Make a neat job of wallpapering around a light switch by removing the cover plate and brushing the paper over the switch box as though it wasn't there. Pull the fuse before starting the job, so the wet paper will not contact a hot wire. After the paper is in place, cut around the outside edges of the switch box with a sharp knife, remove the cut-out section and replace the cover.

*Blanche Campbell, Rivera, Calif.*

### Hinges Hold Twine Ball

Handy to have in the workshop, a ball of twine or cord usually ends up in a snarled mess in a drawer. A couple of T-hinges and a bolt make this neat holder. Screw the short leaves to the wall and fit the bolt through the end holes in the long leaf, and through the ball of twine.

*Ann Zawistowski, Coon Rapids, Minn.*



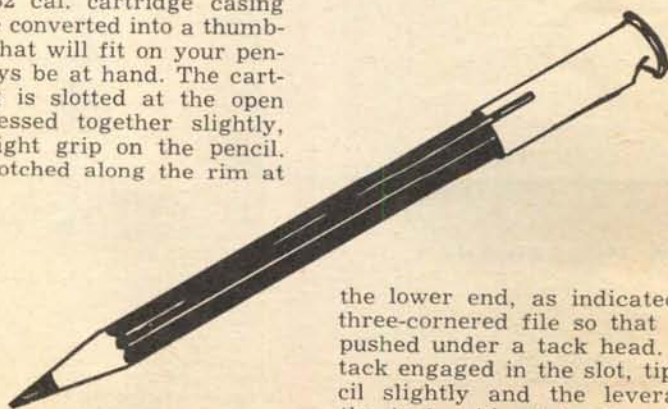
### Shimmed Screwdriver Fits Tightly

With about 300 different standard wood screws available it isn't surprising that the one or two screwdrivers in an average toolbox will fail to fit all of them. When the driver tip is too thin it's likely to become cocked and slip from the screw slot, marring the latter and bending the tip. Prevent this, in such cases, by shimming the tip with a narrow piece of metal of the required thickness. It can be bent to fit the driver shaft like a pencil clip.

*Ken Murray, Colon, Mich.*

### Pencil Thumbtack Puller

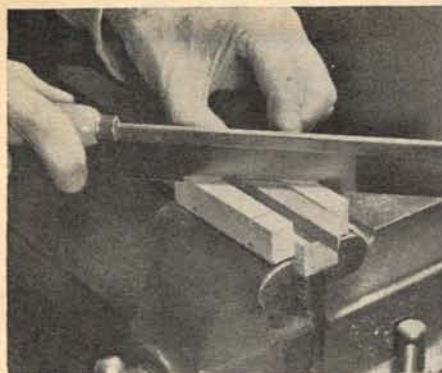
A spent .32 cal. cartridge casing can easily be converted into a thumbtack puller that will fit on your pencil and always be at hand. The cartridge casing is slotted at the open end and pressed together slightly, forming a tight grip on the pencil. Then it is notched along the rim at



the lower end, as indicated, with a three-cornered file so that it can be pushed under a tack head. With the tack engaged in the slot, tip the pencil slightly and the leverage pulls the tack without bending it.

*M. Robert Beasley, Jackson, Mich.*





### Miter-Box Vise Attachment

For sawing small moldings and other strips at precise angles, a miniature miter box that is gripped in a bench vise and used to guide a dovetail or "razor" type saw is handier than setting up a conventional circular saw or similar equipment. The box shown was made from three pieces of maple: two  $\frac{1}{2} \times \frac{3}{4} \times 3\frac{1}{4}$ -in. side pieces and one  $\frac{3}{4} \times \frac{3}{4} \times 3\frac{1}{4}$ -in. center piece. These are glued and nailed together so the center piece projects  $\frac{3}{8}$ -in. below the side pieces for the vise jaws to grip. One set of slots is carefully cut at right angles to the sidepieces, for squaring ends; and two sets of 45 deg. slots are made for use in sawing picture-frame corners, etc. Guides for other angles can be made by sawing new slots. After slots become worn, new ones can be cut as long as sufficient material remains, then it is but a matter of minutes to make a new miter box. *Walter E. Burton, Akron, Ohio*

### Brush Aids Patching Plaster

An old paintbrush comes in handy when patching plaster or filling holes or cracks in wood. Just apply the spackling material with a spatula or knife and while it is still wet, lightly smooth rough spots with the brush which has been dipped into clean water. This reduces the amount of sanding needed before the finishing coat can be applied. *David Hale, Fresno, Calif.*

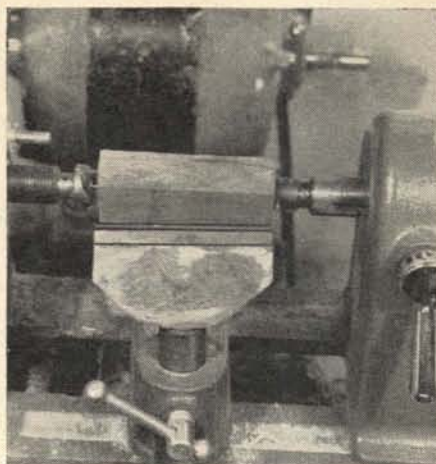
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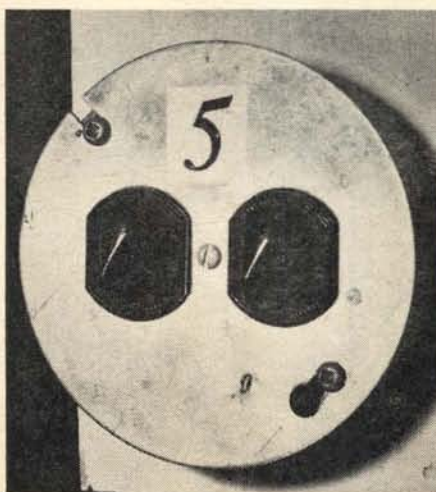
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### Auxiliary Tool Rest for Short Work



When turning workpieces on a wood lathe that are so short that the tool rest cannot be fitted between the head and tail stocks, make an auxiliary rest. Buy an extra rest and cut off the ends so it is short enough for those occasional jobs.

*D. C. Marshall, Manhattan, Kans.*



### Numbered Outlets Speed Fuse Changing

When an appliance or power tool blows a fuse you will know immediately which fuse to change if all receptacles are numbered, with matching numbers under the fuses in the main fuse box. Receptacles in the shop can be numbered as indicated with fairly large numerals, but in the kitchen and the rest of the house, smaller, less conspicuous numbers can be used. To set up the numbering system, first turn on all the lights in the house, using lamps to check receptacles. Then, unscrew one fuse and check to see which lights and receptacles have gone dead. These, of course are numbered 1. Unscrewing the second fuse will determine what circuits are wired through it, and so on.

*T. C. Van Alstyne, Ontario, Canada*

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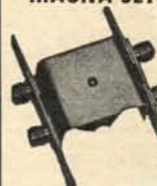
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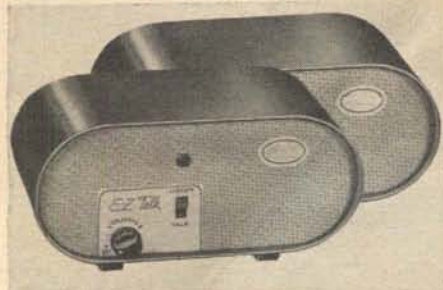
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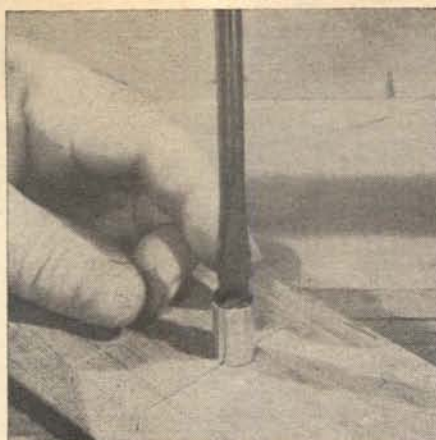
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## WORKBENCH SHOP TIPS

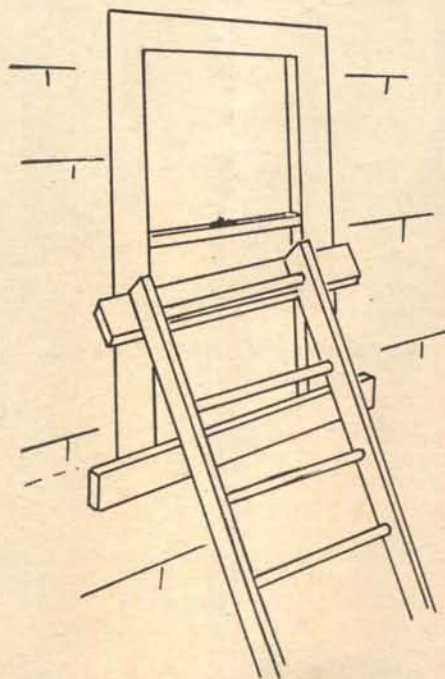


### Tube Prevents Screwdriver From Slipping

The accidental slipping of a screwdriver from the head of a screw can gouge the surface of a piece of work and make refinishing necessary. If you use a short piece of metal tubing in which the driver tip moves easily, it will hold the latter on the screw to the last turn. Several pieces of tubing in sizes to fit all screwdrivers in use should be kept at hand on the shop workbench.

Ken Murray Colon, Mich.

### Auxiliary Ladder "Rung" Aids Work on Windows



Here is a useful kink that will help when working on a window from the top of a ladder. Simply spike a length of 2x4 or a piece of 1-in. board across the ends of the ladder long enough to span the width of the window. This permits the ladder to be used at any height on the window, and directly in front of it.

Ann Zawistowski, Coon Rapids, Minn.

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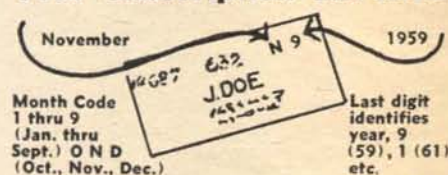
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## How to Enlarge Squared Patterns and Designs

Number the outside squares of the pattern both horizontally and vertically. Now, using a piece of paper (preferably tracing paper) sufficiently large for the full-sized pattern, measure off the exact area you wish the pattern to occupy. Divide this area into the same number of squares as appears in the smaller pattern. Number the outside squares on the paper in the same manner as you have numbered the original pattern.

Copy carefully into each of the large squares the portion of the design that appears in each correspondingly numbered square of the original pattern.



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Are you interested in getting good money for your handcrafted products? Would you know how to get started, what to make, where and how to sell it at a nice profit? And do all this in your spare time—in your own home workshop—without the responsibility of a full-time business? You can! Do the very thing you love to do—creating, designing, building—and getting paid for it! Ever thought about the intriguing possibilities?

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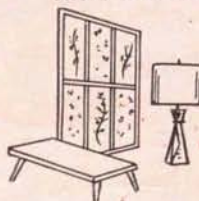
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"Selling isn't up my alley," you say. That's probably true of most craftsmen. But please remember that buyers for stores and mail order houses need products just as much as you need customers. Companies spend millions of dollars each year, sending their shoppers to gift fairs, craft shows and out-of-the-way art and craft centers in search of the unusual in new products. If you can produce a quality item, and if you are able to supply the demand, you will find the buyers . . . or they will find you.

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